Océ User manual

Arizona 200/250 GT

User Manual Version 2.6

Océ-Technologies B.V.

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Chapter 1
Introduction

Preface

Introduction

This User manual introduces you to the Océ Arizona® 200 GT and the Océ Arizona® 250 GT inkjet printers. These two printers are almost identical with one exception: the 200 GT has four sets of printheads; and the 250 GT has eight sets. The only difference in function is the actual speed (Refer to Printer Specifications in Chapter 2 for details). In term of image quality and all other functions, the two models are the same. The User manual will use the term Arizona 200/250 GT to refer to both printers. The manual will orient you to the many features and procedures that enable you to print professional quality images on various media with these printers.

Multi-Language Support

Both printers have user interface software that supports multiple languages (with Release 1.5 or greater). Refer to the User Interface Settings in Chapter 5 to see how to choose your preferred language and other setup information.

This User manual is also available in seven other languages. Printers are shipped with a printed copy of the US English version. You can download a PDF file of the manual in all of the eight languages that we support from the Customer Support web page: http://www.dgs.oce.com/PrinterSupport/

Supported languages:

- US English
- UK English
- Dutch
- German
- French
- Spanish
- Italian
- Japanese

Océ DGS on the Internet

For further information on documentation and support for your Arizona 200/250 GT or for information on other Océ Display Graphics Systems products, please visit our web site: http://www.dgs.oce.com
To provide feedback and report errors in this document:
DGSTechnical.Writer@oce.com

Safety Information

This manual has three sections that contain details on safety when handling ink and using the printer. Also, where applicable, cautions and warnings are used throughout this manual to draw your attention to safety precautions.

- "Safety Guidelines for Ink Materials" offers advice in the proper handling of UV inks;
- "Interlock Safety System" explains the safety features built in to the printer that prevent and minimize access to Mechanical, Electrical, Thermal and UV hazards; and
- "UV Curing System Safety" presents warning about the dangers of exposure to UV light. Some of the material from that section are duplicated here.

UV Curing System Safety

Caution: UV Light Hazard: Wear Eye and Skin Protection. Eyewear, Gloves, and Long Sleeves are essential for Users and Bystanders. Special restrictions and protective measures are essential - These include the use of Eye and Dermal (skin) Protection. Industrial Protective Eyewear with lenses that block both UVA and UVB must be used. Long sleeved work clothes and gloves are essential to reduce the Skin's exposure to UV emissions. Avoid looking directly at UV lamps.

Caution: Warning for Seated Individuals: The UV Emissions and Blue Light Emissions profile of the Arizona 200/250 GT is at its worst for individuals in a seated position (Table Height of 90cm). Remove all chairs within 5 metres (16 feet) of the printer.

UltraViolet Light Radiation Hazards Emission:
Effective UV-irradiance Emission Category of Arizona 200/250 GT According to 7.1 of EN12198-1:2000 (Category 2) - Special restrictions and protective measures are essential - These include the use of Eye and Dermal (skin) Protection. Industrial Protective Eyewear with lenses that block both UVA and UVB must be used. Long sleeved work clothes and gloves are essential to reduce the Skin's exposure to UV emissions.

Blue Light Radiation Hazards Emission (Visible radiation in the range of 400nm to 700nm (Blue Light 300nm - 700nm):
Effective Irradiance respective the Effective Radiance Emission Category of Arizona 200/250 GT According to 7.1 of EN12198-1:2000 (Category 1).

Customer Service

If your printer malfunctions and you are unable to resolve the problem, field service technicians can be dispatched to your site to conduct repairs. Service visits are paid for by the customer, either under a maintenance agreement, by purchase order or prepayment. Time and material rates are charged for any service not covered under a maintenance agreement. Before calling to report a problem, gather as much information about the problem as possible and have it ready to provide to your customer care center. The more information you can provide initially, the more quickly the problem can be corrected.

Responsibilities of the Operator

The operator of the Arizona 200/250 GT must be properly trained. Océ provides training for the operator in the use of the printer hardware and software at the time of installation. It is the customer's responsibility to ensure that only properly trained personnel operate the printer. Operators must be fully versed in the operation of Onyx ProductionHouse® . For any operator unfamiliar with its operation, Onyx ProductionHouse® training is required. Training courses are available; contact your local Océ representative.

The operator or other trained personnel are expected to handle all user maintenance as detailed in the User Guide, and also replacement of consumable parts (except print heads). If your site has a technician in charge of printer maintenance, that person is the optimal candidate. While any trained operator may perform routine maintenance, the best maintenance results from familiarity with the printer's internal operation and history.

The printer requires daily printhead maintenance to ensure the highest print quality and longer life for the printheads. The printer design provides you easy access to perform this simple task. Periodic cleaning must be scheduled for some components on a weekly basis. A few minutes spent cleaning also helps to ensure optimal printer function and the highest quality prints.

It is the responsibility of the operator to try to eliminate simple problems before calling a service representative. But knowing when to call for service is also important. An untrained operator must not attempt to service the printer as this may cause further damage. When you have determined that a service call is required, call as soon as possible. See the Maintenance section for more details.

Responsibilities of the Arizona 200/250 GT Service Technician

Field service technicians must have Océ Display Graphics Systems Arizona 200/250 GT service training. The service technician is responsible for all repairs, upgrading and modification requested by the customer or mandated by the Océ Display Graphics Systems Service and Support Group. Service personnel are furnished with proper tools for the installation and maintenance of the printer. In addition to the tools and custom kits, each engineer will have basic tools for proper maintenance and servicing.

Statement of Foreseen Use

The Arizona 200/250 GT flatbed inkjet printer uses piezo printing technology and UV curable inks to produce outdoor-durable output. It can print directly onto rigid and flexible substrates up to 2.5 m (98.4") x 1.25 (49.2") and up to 48 mm (1.89") thickness. The printer holds substrates stationary while the print head assembly moves across to create the print, eliminating image skew problems often associated with rigid stock feed systems.

Product Compliance

Introduction

This section details the compliance and agency standards that the Arizona 200/250 GT conforms to. It also provides manufacturing and contact information.

Electromagnetic Compliance (EMC)

FCC Statement for Class A Device:

This equipment generates, uses and radiates radio frequency energy and if not installed and used as designed or intended, may cause interference to radio communications. This equipment has been tested and found to comply with the limits for a Class A computing device. This equipment has been designed to provide reasonable protection against such interference when operated in residential and commercial environments. Operation of this equipment in a residential area may cause interference, in which case the user, at his own expense, is required to take whatever measures are required to correct the interference.

FCC Notice: This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

Any change or modification not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device contains an intentional radiator (RFID)
Radio Certificate Number: IC:6497A-3010105668
FCC Identifier: U2P-3010105668

Product Safety

Compliance Category.
This equipment is considered to be information technology equipment for use in a light industrial setting. The equipment falls under the scope of the Machinery Directive due to the movement associated with the gantry carrying the printer head carriage assembly. As such, a full risk assessment per EN 1050 and a full mechanical and machinery assessment per 292-2 + A1 Annex 1 was performed. As the equipment is primarily information technology equipment (large format printer receiving data from a computer terminal), and is within the scope of EN 60950 (mains operated ITE equipment under 600V including plotters and photo printers - clause 1.1.1, EN 60950: 2000), a full electrical evaluation was performed per EN 60950:2000.

Agency Compliance and Standards

The Arizona 200/250 GT complies to the following Agencies and Standards:
Note: Third Party confirmation of all declared will be obtained.

Safety

Berufsgenossenschaft GS Mark and BG-Prufzert - Mechanical and Electrical Safety
Printing Equipment: EN1010
Machinery Electrical Safety: EN60204 including Annex 1
Machinery Mechanical Safety: EN954-1, EN1050-1
Machinery UV Radiation Safety measured according to: EN12198-1 and EN12198-2
IT Equipment Electrical Safety: EN60950-1:2001 (with CB Scheme Report)

Note: *All applicable compliance certificates are available on our web site: see http://www.dgs.oce.com/PrinterSupport/*

EMC

EMC Directive: CE Marking
EN55022: 1998 Information Technology Equipment. Emmisions Characteristics.
EN55024: 1998 Information Technology Equipment. Immunity Characteristics.
EN 61000-6-3:2001 Emissions: Residential, Commercial and Light-Industrial Equipment, Generic
EN 61000-6-1:2001 Immunity: Residential, Commercial and Light-Industrial Equipment, Generic
R&TTE Directive: ETSI EN 301 489-01 V1.5.1, ETSI EN 301 489-03 V1.4.1
USA and Canada: 47 CFR Part 15 & Industry Canada.

Limits for Voltage Fluctuations and Flicker:

This equipment does not meet the requirements for EN61000-3-3:
Apply Clause 6.2.2**EN61000-3-11**

This equipment is subject to conditional connection:
This equipment may only be connected to mains connections with an impedance at 50Hz of **Zsys = 0.268 + j0.168 Ohm** or less. In case it is observed that this equipment causes 'lightflicker' to the environment, contact the supply authority in order to verify if the mains network has lower impedance than the one specified above.

Noise Measurement Test Summary

Tested according to EN13023:2003, EN11204, ISO3744:1994(E)/ISO3746:1995(E) and declared according to ISO4871:1984(E)
Measurements taken at the sample in 5 different locations, Printer in normal operation with Vacuum Pump, does not exceed 75dB (maximum measured value: 66dB). For all locations, provide noise protection enclosure or remove pump from location.

Manufacturer:

Océ Display Graphics Systems (ODGS)
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Canada V6V 2C3
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E-mail: salesinformation@oce.co.uk - Web site: www.oce.co.uk

Toxic and Hazardous Substances or Elements in the Product

Part Name	Lead (pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent (CrVI)	Polybromiated biphenyls (PBB)	Polybrominated dipenylether (PBDE)
UV Curing Lamps	0	X	0	0	0	0
VGA Monitor	0	X	0	0	0	0
Vacuum Gauge Indicator	X	0	0	0	0	0

Part Name	Lead (pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent (CrVI)	Polybromiated biphenyls (PBB)	Polybrominated dipenylether (PBDE)
Linear Encoder Readheads	X	0	0	0	0	0
Printheads	X	0	0	0	0	0

Chapter 2
Product Overview

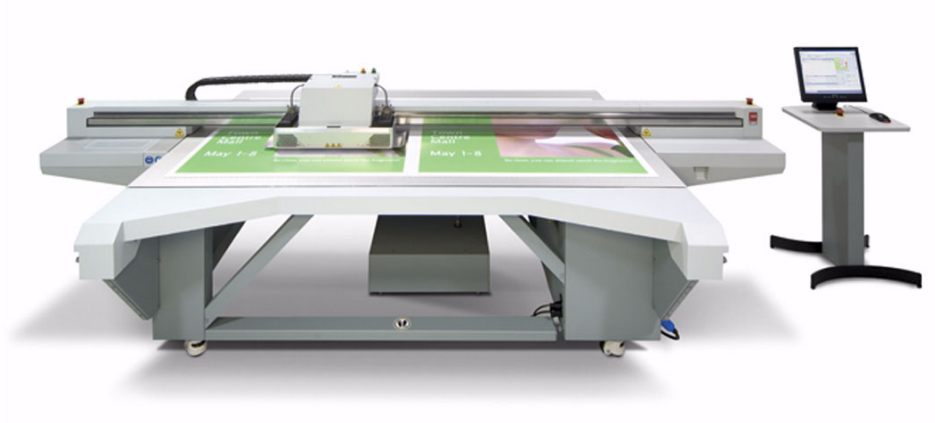
Arizona 200/250 GT Printer Specifications

Introduction

The Arizona 200/250 GT is a 4 color (CMYK) UV flatbed inkjet printer capable of producing large format images on various rigid and flexible media. The printer consists of a large vacuum table and moving gantry. The material is held flat and stationary on the vacuum table during printing. The gantry contains a carriage that sweeps across the table as the gantry moves in steps along the length of the table to print an image on the media. In addition to the benefits of stationary positioning, the use of UV ink technology on rigid material eliminates finishing processes such as mounting and lamination.

Note: *The Arizona 200/250 GT must be operated in accordance with the environmental conditions specified in the Arizona 200/250 GT Site Preparation Guide and safety requirements noted in this document.*

Illustration



[1] Arizona 250 GT Printer

Arizona 200/250 GT Specifications

The Arizona 200/250 GT is part of a complete printing solution that includes: ONYX® workflow software (ONYX ProductionHouse™ recommended), optional Roll Media Option for flexible media printing, Océ inks and other consumables, Océ media and Océ Professional Services. The Arizona 200/250 GT specifications are listed below. See Chapter 6 for Roll Media Option specifications.

[2] Specifications (1 – 2)

Feature	Specification
Printing Technology	Piezoelectric inkjet using Océ VariaDot™ technology: the Arizona 250 GT has two variable dot printheads per color, 8 in total; while the Arizona 200 GT has one variable dot printheads per color, 4 in total.
Format	True flatbed printer for rigid media with Roll Media Option for flexible media
Ink System	Océ IJC255 UV-curable inks available in Black, Cyan, Magenta and Yellow. Packaged in quick-change, 2 liter ink bags.
Maximum Media Size	2.5m (98.4") x 1.25m (49.2")
Media Thickness	Maximum: 48mm (1.890")
Maximum Print Size	2.51m (98.8") x 1.26m (49.6")
Media Weight	Maximum: 34 kg/sqm (7 lbs/sqft)
Nozzle Drop Volume: Variable droplet sizes from 6 to 30 picolitres	The ability to vary the drop size to as little as 6 picolitres produces sharp images with smoother gradients and quartertones. The ability to jet larger droplets up to 30 picolitres produces dense, solid colors. The result is near-photographic image quality. Text as small as 6 pt. is perfectly legible.
Print Modes / speeds (flatbed only) for Océ Arizona 200 GT	**Production**: 9.34 sq.metres/hr. (101 sq.ft./hr.) **Quality**: 6.43 sq.metres/hr.) 69 sq.ft./hr.) **Fine Art**: 4.82 sq.metres/hr. (52 sq.ft./hr.)
Print Modes / speeds (flatbed only) for Océ Arizona 250 GT	**Production**: 16 sq.metres/hr. (172 sq.ft./hr.) **Quality**: 12 sq.metres/hr.)129 sq.ft./hr.) **Quality-Matte**: 8 sq. metres/hr. (85 sq. ft./hr.) **Quality-Density**: 6.5 sq. metres/hr. (70 sq. ft./hr.) **Fine Art**: 9 sq.metres/hr. (97 sq.ft./hr.)
User Interface	LCD flat-panel monitor and mouse on a user-positioned podium.
Curing System	UV curing lamp
Weight	544kg (1200lbs)
Dimensions	Table: 2.65m (8.7 ft.) 2.00m (6.5 ft.) Gantry: 4.0m (13.4 ft.) x .45 m (x 1.5 ft.)

[2] Specifications (2 – 2)

Feature	Specification
Power Requirements Voltage: (Rated Current: 16A)	208 through 240VAC ±10% 60Hz Single Phase 200 through 240VAC ±10% 50Hz Single Phase Recommended Circuit Breaker: North America 20A, European Union 16A
BTU Output	10,000 BTU (2950 watts) under continuous operation
Hardware Interface	USB, Ethernet TCP/IP, 100 base-T (or Gigabyte, if supported by the local network).
Image Processing Software	ONYX® ProductionHouse Océ Edition version 7 or greater (ONYX® PosterShop available but not recommended). The driver for the Arizona 200/250 GT is included in the ProductionHouse Océ edition, but is not in the PosterShop Océ edition.

Océ VariaDot™ Variable Droplet Imaging Technology

The Océ Arizona 200/250 GT offers superior print quality and ink economy through the use of Océ VariaDot imaging technology, the next evolution in piezoelectric inkjet technology that enables a print head to produce droplets of varying volume. This differs from the current piezoelectric print head technology that is restricted to the use of fixed droplets. The use of variable sized droplets results in dots on the media of varying size (area) and density which in turn allows the use of four-color (CMYK) printing for all image features. Using Océ VariaDot imaging technology results in excellent print quality and a superior ink economy over 6-color printing systems.

Océ VariaDot imaging technology allows piezoelectric print heads to produce droplets of varying volume on demand. This allows the ONYX™ ProductionHouse software to specify the appropriate droplet size for each specific image feature. When imaging fine detail such as small type or fine lines, very small droplets can be used, when imaging areas of tonal transition or quarter-tone values such as skin tones drops of medium volume can be used and when printing areas of high density such as solid colors, large droplets can be used.

Océ VariaDot™ for Improved Image Quality

Océ VariaDot imaging technology can be compared to painting a room in your house. You use a large brush size for quick coverage over large areas and a much smaller, finer brush for detailed areas. Trying to paint a large wall with a tiny brush would result in many artefacts and trying to paint a fine fresco trim with a large brush would be very frustrating. In the same way, Océ VariaDot uses the appropriate size droplet for each specific image feature resulting in the best possible image quality in every part of the printed image.

Océ VariaDot™ for Reduced Ink Consumption

A significant benefit of Océ VariaDot imaging technology is that it allows the use of only four inks (CMYK) for all areas of the printed image. This is very significant to the user in terms of ink consumption per square meter because the current "de facto standard" in the industry is six-color piezoelectric printing. This older technology uses lighter versions of Cyan and Magenta inks, often referred to commercially as "Light Cyan" and "Light Magenta" to overcome the image quality problem previously associated with four-color (CMYK only) printing.

Chapter 3
Safety Information

Safety Guidelines for Ink Materials

Introduction

This section outlines the safety concerns involved with the handling and use of the UV ink and Flush for the Arizona 200/250 GT printer. Read all of the material in this section and also review the Material Safety Data Sheet (MSDS) documents before handling any UV ink or using the printer.

Note: *The full text of the MSDS for all UV inks and Flush is found on the ODGS web site at the following location: http://www.dgs.oce.com/PrinterSupport/MSDS_Support/MSDS_Sheets.htm*

Caution: Both UV inks and the curing lamps can be harmful if not properly handled. Follow these guidelines carefully in order to ensure maximum safety.

Personal Safety

The operator should wear nitrile gloves, a protective apron, and safety glasses with side shields when handling inks.

Note: ***Warning for Seated Individuals***- *The UV Curing System on the Arizona 200/250 GT generates hazardous levels of thermal, electrical and UV energies. UV light exposure is at it's worst for individuals in a seated position (Table Height of 90cm). Do not sit within 5 metres of the printer and do not look at the UV lamps if your eyes are positioned below the level of the printer table.*

Ventilation and Room Volume

The minimum space/ working room volume for using the Arizona 200/250 GT is 69 m3 or 2430 cubic feet. The printer should operate in an area where a good standard of general ventilation is available at 5 to 10 air changes per hour. Mechanical Ventilation must be added where the air changes per hour are under 5 per hour.

Handling UV Inks

Read and practice safety guidelines as outlined in the MSDS for each ink. Post these documents in the work area as required by prevailing law. MSDS for all four inks are provided when you purchase inks. The following is a summary of the important safety aspects of the MSDS that are common to all UV inks.

[3] Immediate (Acute) Health Effects by Route of Exposure

Exposure by:	Effect:
Inhalation:	Can cause severe respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.
Skin Contact:	Can cause severe irritation, defatting, and dermatitis. Irritation effects may last for hours or days but will not likely result in permanent damage.
Eye Contact:	Corrosive to eye tissue. Can cause severe irritation, tearing, and burns that can quickly lead to permanent injury including blindness.
Ingestion:	Severely irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

[4] Long-Term (Chronic) Health Effects

Exposure by:	Effect
Inhalation:	Upon prolonged and/or repeated exposure, can cause severe respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.
Skin Contact:	Upon prolonged or repeated contact can cause severe irritation, defatting, and dermatitis. May cause lingering affects but not likely to result in permanent damage if the exposure is eliminated. Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

[5] First-aid Measures (1 – 2)

Exposure by:	Remedy
Inhalation	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. This corrosive material can cause immediate and permanent eye damage. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye as advised by your physician.

[5] First-aid Measures (2 – 2)

Exposure by:	Remedy
Skin Contact	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion	Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute.

[6] Accidental Release Measures - Dealing With Spilled Ink

Personal Precautions and Equipment	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Personal protective equipment needs must be evaluated based on information provided on the MSDS sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

[7] Handling & Storage

Handling Precautions	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid contact with material, avoid breathing dusts or fumes, use only in a well ventilated area. Wash thoroughly after handling. Do not get in eyes, on skin or clothing. Remove contaminated clothing and wash before reuse.
Storage Conditions	Store in a cool dry place. Isolate from incompatible materials.

[8] Exposure Controls

Engineering Measures	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. It is recommended that facilities storing or using this material be equipped with an eyewash and safety shower.

[9] Personal Protection

Area	Strategy
Respiratory Protection	Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Respiratory protection may be required in addition to ventilation depending upon conditions of use.
Eye Protection	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.
Skin Protection	Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Use of protective coveralls and long sleeves is recommended.
Gloves	Wear impervious material.

Disposal of UV Ink

[10] Disposal Considerations

Disposal Methods	Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

UV Curing System Safety

Introduction

The UV Curing System on the Arizona 200/250 GT generates hazardous levels of thermal, electrical and UV energies.

The Arizona 200/250 GT printer uses UV-curable ink that needs a high energy level of UV light to cure. The system is made up of two medium pressure mercury arc lamps attached to the carriage. The ink has been designed using the proper photo-initiator to cure at the highest efficient wavelength of the Lamp (366nm). **UV Lamp Hazards:** Superficial eye damage and burning of the skin can occur with even brief exposure to UV light. Serious injuries can result from prolonged exposure, especially if unshielded. UV lamps operate at very high temperatures (approximately 800° Centigrade). For this reason, never touch a lamp which has been in operation. Let the lamp cool before attempting any maintenance, and then use extreme care in handling the lamp cartridges. The UV bulbs contain a small amount of metallic mercury which is toxic when ingested, handled, or breathed. Therefore, if bulbs are broken, care should be taken to clean up the spill immediately, and then disposed of according to local regulations concerning Mercury disposal.

Bare skin contact with the UV lamps must be avoided. Compounds from the skin when heated on lamps operating at 600 to 850° C will form permanent etching on the quartz surface that can decrease UV energy transmission. A contaminated lamp eventually may overheat, causing premature failure.

Ozone: Ozone is a toxic gas which all medium pressure UV lamps create. As the lamp warms up, it briefly passes through a section of the light spectrum which excites oxygen molecules enough to create ozone. Once a UV lamp has completely warmed up, only very minute amounts of ozone are present.

Note: *The Arizona 200/250 GT printer has a built-in interlock safety system that shuts down the motion motors if the interlock is tripped. This ensures that the operator is not exposed to any hazards. The interlock system includes an aluminum safety gate around the perimeter of the carriage that reduces the UV light exposure and also stops carriage motion if it is not properly seated. See the section "(see 'Interlock Safety System' on page 30)" for more details on how it works.*

Caution: Warning for Seated Individuals: The UV Emissions and Blue Light Emissions profile of the Arizona 200/250 GT is at its worst for individuals in a seated position (Table Height of 90cm). Remove all chairs within 5 metres (16 feet) of the printer.

Caution: UltraViolet Light Radiation Hazards Emission: Effective UV-irradiance Emission Category of Arizona 250 GT According to 7.1 of EN12198-1:2000 (Category 2) - Special restrictions and protective measures are essential - These include the use of Eye and Dermal (skin) Protection. Industrial Protective Eyewear with lenses that block both UVA and UVB must be used. Long sleeved work clothes and gloves are essential to reduce the Skin's exposure to UV emissions.

UltraViolet and Blue Light Hazards Categories

Blue Light Radiation Hazards Emission (Visible radiation in the range of 400nm to 700nm (Blue Light 300nm - 700nm):
Effective Irradiance respective the Effective Radiance Emission Category of Arizona 200/250 GT According to 7.1 of EN12198-1:2000 (Category 1).

Interlock Safety System

Introduction

The Arizona 200/250 GT printer has an integrated safety interlock system that stops all machine motion when a situation that might compromise operator safety occurs. The printer has three Emergency-Stop buttons: one on each end of the gantry, and one on the Control Station podium. Activating an Emergency-Stop button will switch the Safety Monitoring Relay input circuits. This causes the system to isolate the power to the motion control motors, and also turns off the Arizona 200/250 GT curing system (UV lamps). The Maintenance Station and the Safety Gate on the carriage also have an interlock function. Beacons lights indicate the status of the safety system as explained in this section.

How the Interlock System Works

All system Interlock circuits operate as one. This means that any open interlock switch and/or Emergency Stop switch kills motion ability in all system electronics. Drive(s) needed for media loading purposes are exempt from this requirement. Both System PCB's contain the same Safety Interlock Circuit that functions as a single unit. However, an over-current condition in the Drive circuit on one PCB can disable itself without the knowledge/action of the other PCB's.

Emergency Stop Function:
There are three Emergency Stop buttons, one is located at the Operator Control Station, and one at each end of the Gantry. The fourth Emergency Stop is the AC power Supply Disconnect. Motion Motors that are disabled include the Gantry Drive, Carriage Drive, Z-Axis Drive (Carriage up and down movement), all Ink and Maintenance Pumps, Heaters, Table Vacuum Pump, and UV Lamps (not UV Cooling Fans).
Upon release (reset) of an Emergency Stop, no motion may be initiated without acknowledgment of the Operator, i.e. User interface message on the LCD display with Operator intervention acknowledgment. To re-activate the printer after you press an Emergency Stop button, turn the button counter-clockwise. If the printer has encountered an error, you must correct that error first. Errors are displayed on the LCD panel that is part of the Control Station. When the error is corrected, release the Emergency-Stop button, acknowledge the User interface message and continue printer operation.

Maintenance Station Interlock Function:
The Maintenance Station is located under the carriage and provides access to clean the printheads. Carriage and Gantry motion motors are disabled and UV lamps are turned off (if they were On), when the station sliding door is open. This includes the Gantry Drive and Carriage Drive. Interlock system is automatically reset when sliding door is closed. No User interface message with operator acknowledgment is required to re-enable function of the printer.

Safety Guard Interlock Function:
The Safety Guard is an aluminum fence around the perimeter of the carriage. Motion Motors disabled when it is not properly seated include the Gantry Drive and Carriage Drive. Also UV Lamps switch Off (Not UV Cooling Fans), and Z-Axis drive initializes (Carriage drives to Top Position and Holds there).
Carriage Interlock must be cycled to ensure the Interlock is functional and that the Carriage Safety Guard is in place. User interface message with user intervention acknowledgment is required to re-enable functioning.

Power-up Interlock Test for Carriage
On power-up, the Interlock System will not permit the motion motors to be turned, so the machine will be unable to initiate motion. To satisfy the requirements for Machinery Directive, the Carriage Interlock must be cycled to ensure the Interlock is functional and that the Carriage Safety Guard is in place. Upon cycling of Carriage Interlock, no motion may be initiated without acknowledgment of the Operator, i.e. User interface message with operator intervention acknowledgment.

Beacon Light Status

The green beacon light is mounted to the top surface of the printer carriage. The purpose of this light is to indicate basic printer status to the operator.
Beacon off: indicates the printer can be approached without caution. The machine cannot initiate movement since the interlock Safety System has disabled all motion to the electrical control system.
Beacon on: indicates the Machine is powered up and ready to initiate motion. This tells an operator to approach the machine with caution, because it could initiate motion at any moment.

Arizona 200/250 GT Safety Labels

Introduction

The safety labels are placed at strategic locations on the printer to warn the operator of possible dangers and hazards. It is important to be aware of the meaning of these labels to ensure safe operation of the printer.

Caution: Read and understand all of the safety label descriptions in the table below before operating the printer.

Safety Labels

[11] Safety Labels (1 – 2)

Description	Label
Warning: UV Light Hazard. Avoid looking directly at UV lamps. Located on carriage cover to remind the operator that looking at the UV light source is dangerous.	
Wear Safety Gloves Located on the maintenance station as a reminder to always wear gloves when handling ink.	
Risk of Eye Injury. Wear Eye Protection - Located on the maintenance station as a reminder that the UV-curable ink is harmful to the eyes and skin. Always wear glasses and gloves when handling ink.	
Machine lockout: a reminder to turn off and lock out the AC power switch before servicing any electrical components. Located on the mains power switch.	

[11] Safety Labels (2 – 2)

Description	Label
Warning: Electric Shock Hazard Located on the door to the electronics enclosure, the UV lamp power supply cover, the carriage cover, and the vacuum pump enclosure. This area can only be accessed by a trained service technician.	
General Warning Located on the AC enclosure cover. This area can only be accessed by a trained service technician.	
Pinch Point A reminder that horizontal movement of the carriage can create a pinch hazard as it moves along the gantry. Located on both ends and the rear of the carriage.	
Crush Hazard: Keep hands clear while operating. A reminder that vertical movement of the carriage can be a crush hazard if hands or objects are placed in these locations. Located on the maintenance station and both ends of the gantry.	
Thermal Hazard Radiated heat from the UV lamps can cause burns. Located on the carriage near the two UV lamps.	

Safety Awareness

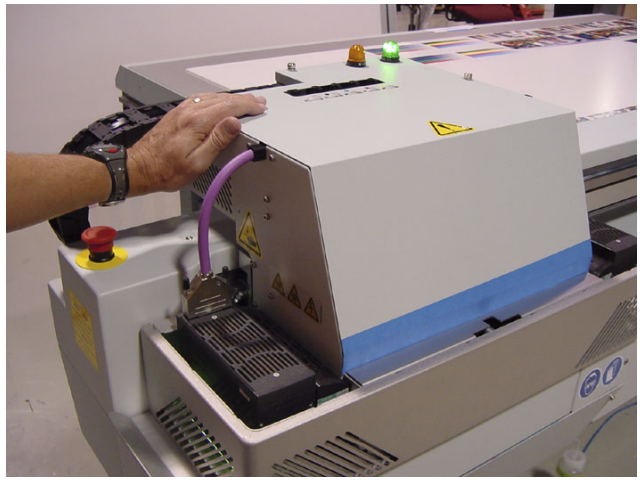
Introduction

This section contains two sets of principles that must be followed to assure maximum safety when operating the Arizona 200/250 GT printer. The first set uses negative examples to show you residual risks to avoid in order to prevent injury to the operator. The second set of principles illustrates some of the residual risks that are inherent in the operation of the printer. These are situations or physical aspects of the printer that may present a potential danger to the operator, but would compromise the capabilities of the printer if changed. Therefore, they are pointed out as a precaution the operator must be aware of when using the printer.

Attention: The photos in the following table illustrate residual risks that must be avoided when operating the Arizona 200/250 GT printer.

Situations and Actions to Avoid

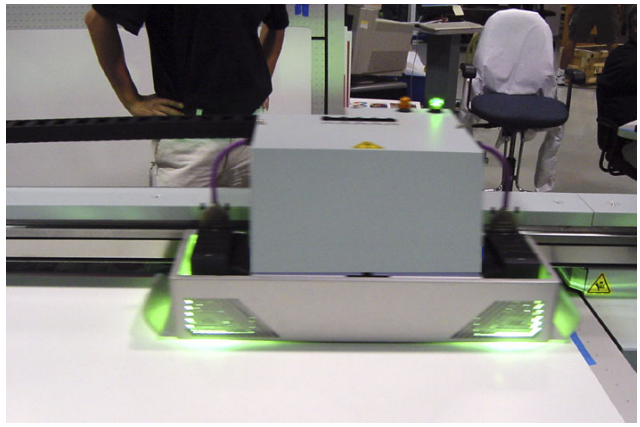
[12] How NOT to use the printer (1 – 3)

Avoid these Situations For Your Personal Safety	
 [11] Keep the table clear	Do not place your hand in the carriage pathway when printer power is on. Do not leave any objects on the table printing surface, except for media that you will print on. Also make sure the media is 48 mm (1.89 inches) or less in thickness.
 [12] Avoid Carriage	Do not push or force the carriage to move manually if it is already in motion. If you do move the carriage, a Motion Error message will display and you will have to use the mouse to click Reset on the user interface LCD display.

[12] How NOT to use the printer (2 – 3)

Avoid these Situations For Your Personal Safety	
 [13] Do not push gantry	Do not push or force the gantry to move manually if it is already in motion. If you do move the gantry, a Motion Error message will display and you will have to use the mouse to click Reset on the user interface LCD display.
 [14] Hot UV Lamps	When the Maintenance Station is open to clean heads, do not touch the UV lamp assembly as it can be hot. Also be aware that the carriage will move up or down when the Raise Carriage switch is pushed.

[12] How NOT to use the printer (3 – 3)

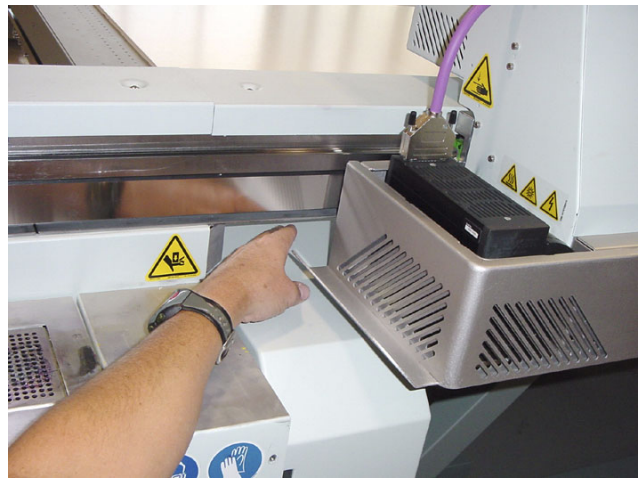
Avoid these Situations For Your Personal Safety	
 [15] IGUS Hazard	Avoid placing fingers, hands or other objects in the IGUS track unless power is off and the printer is locked out.
 [16] UV Lamp Hazard	Avoid looking at the UV lamps, especially if you are seated at the same level as the carriage. Also do not touch the UV lamp assembly or the surrounding guard as they will be hot and may result in burns of the skin.

Residual Safety Risks

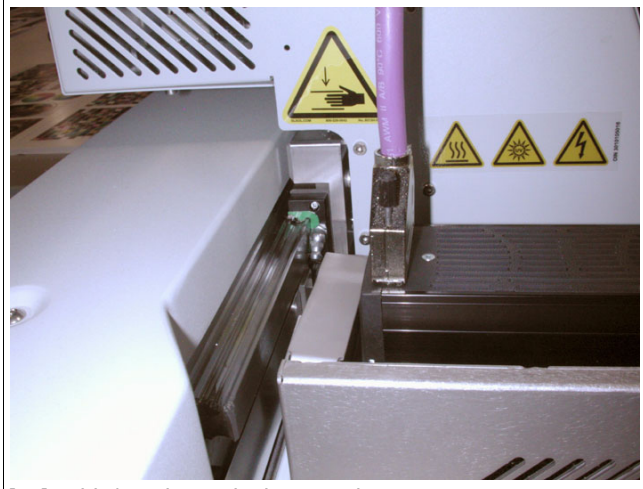
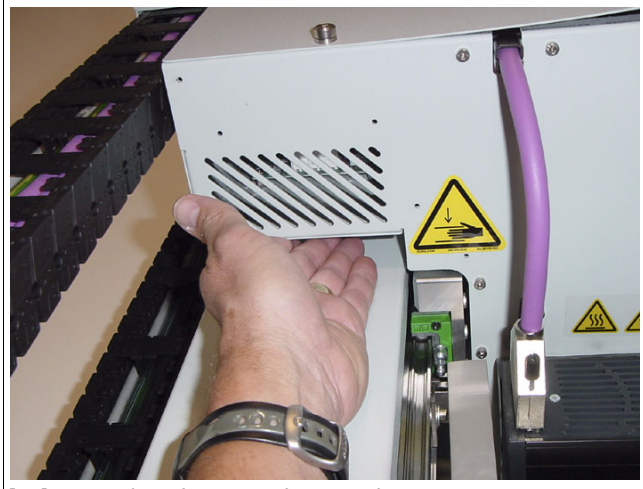
The Arizona 250 GT is engineered to minimize machine components and operating procedures that may compromise operator safety. However, in order to maintain some machine operations and functionality, certain compromises are required. The following table documents some of these residual hazards. By making the operator aware of the potential risks, we hope to ensure maximum safety in the operation of this printer.

Caution: there may be a time lag between when a print job is issued and when the gantry movement actually begins as the UV lamps must warm up first.

[13] Arizona 250 GT Residual Risks (1 – 6)

Risk Area	Crushing/Shear Hazard
A high risk crushing hazard is created by the movement of the carriage and gantry supports. Keep hands away from this area unless the printer power is off.	 [17] Carriage and Gantry Supports
A high risk crushing/pinch hazard is created by the table and the gantry.	[18] Table/Gantry Pinch hazard

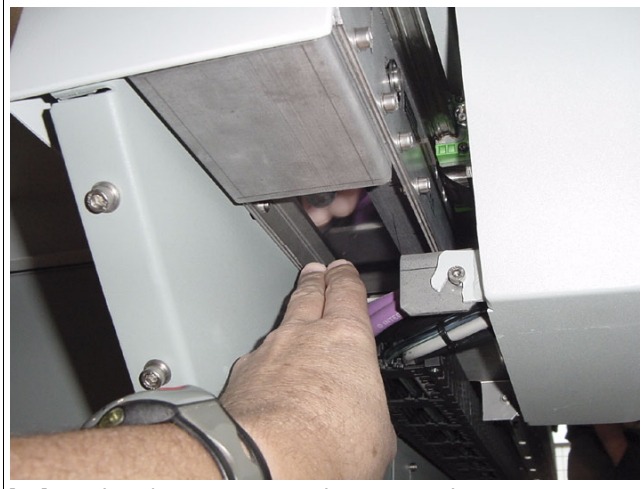
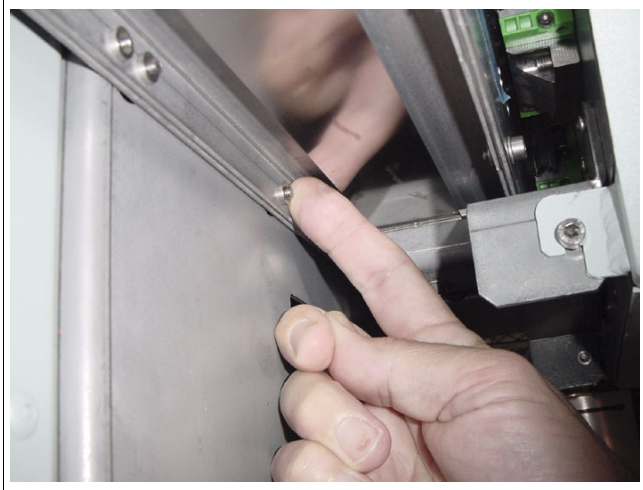
[13] Arizona 250 GT Residual Risks (2 – 6)

Risk Area	Crushing/Shear Hazard
A high risk crushing/pinch hazard is created by the table and the carriage.	 [19] Table/Carriage Pinch Hazard
A high risk crushing/pinch hazard is created by the carriage and the gantry when the Z-Axis is moving (carriage moves up or down).	 [20] Gantry/Carriage Crush Hazard

[13] Arizona 250 GT Residual Risks (3 – 6)

Risk Area	Crushing/Shear Hazard
A medium risk crushing/pinch hazard is created by the gantry and the table frame.	[21] Gantry/Table Pinch harard
A medium risk crushing/pinch hazard is created by the gantry and the table frame stop on the underside of the table at the electronics enclosure end.	[22] Gantry/Table Frame Crush Hazard

[13] Arizona 250 GT Residual Risks (4 – 6)

Risk Area	Crushing/Shear Hazard
Shearing hazard A high risk shearing hazard is created by the carriage and the gantry frame from the bottom.	 [23] Carriage/Gantry Frame Shear Hazard
A high risk shearing hazard is created by the carriage and the gantry frame from the bottom.	 [24] Hazard

[13] Arizona 250 GT Residual Risks (5 – 6)

Risk Area	Crushing/Shear Hazard
A high risk shearing hazard is created by the carriage and the gantry frame.	[25] Hazard
Entanglement hazard A medium risk of finger or material entanglement is created by the web assembly (IGUS track).	[26] IGUS Impact Hazard

[13] Arizona 250 GT Residual Risks (6 – 6)

Risk Area	Crushing/Shear Hazard
A medium risk impact hazard is created by the carriage when cycling from left to right.	[27] Carriage Impact Hazard
Heat hazard: the UV lamp assembly and the surrounding guard can be hot.	[28] UV Lamp Heat Hazard

Roll Media Safety Awareness

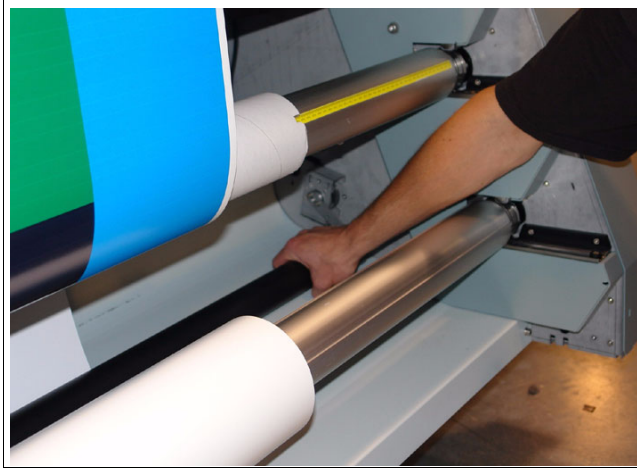
Introduction

This section contains two sets of principles that must be followed to assure maximum safety when operating the Roll Media Option for the Arizona 200/250 GT printer. The first image uses a negative example to show you a situation to avoid in order to prevent injury to the operator. The following images illustrate some of the residual risks that are inherent in the operation of the printer. These are situations or physical aspects of the printer that may present a potential danger to the operator, but would compromise the capabilities of the printer if changed. Therefore, they are pointed out as a precaution the operator must be aware of when using the printer with the Media Roll Option.

Attention: The photos in the following table illustrate residual risks that must be avoided when operating the Arizona 200/250 GT printer.

Situation and Action to Avoid

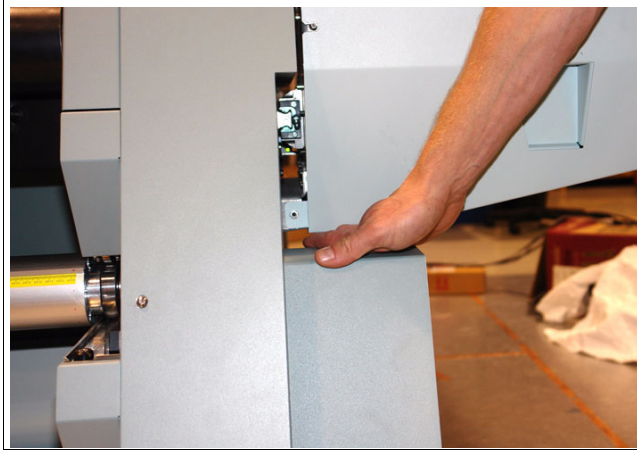
[14] How NOT to use the Roll Media Option

Avoid these Situations For Your Personal Safety	
	Do not place you hands near any of the media shafts or the media tension bar when the printer is printing.

Residual Safety Risks

The Arizona 200/250 GT Roll Media Option is engineered to minimize machine components and operating procedures that may compromise operator safety. However, in order to maintain some machine operations and functionality, certain compromises are required. The following table documents some of these residual hazards. By making the operator aware of the potential risks, we hope to ensure maximum safety in the operation of this printer.

[15] Arizona 200/250 GT RMO Residual Risks

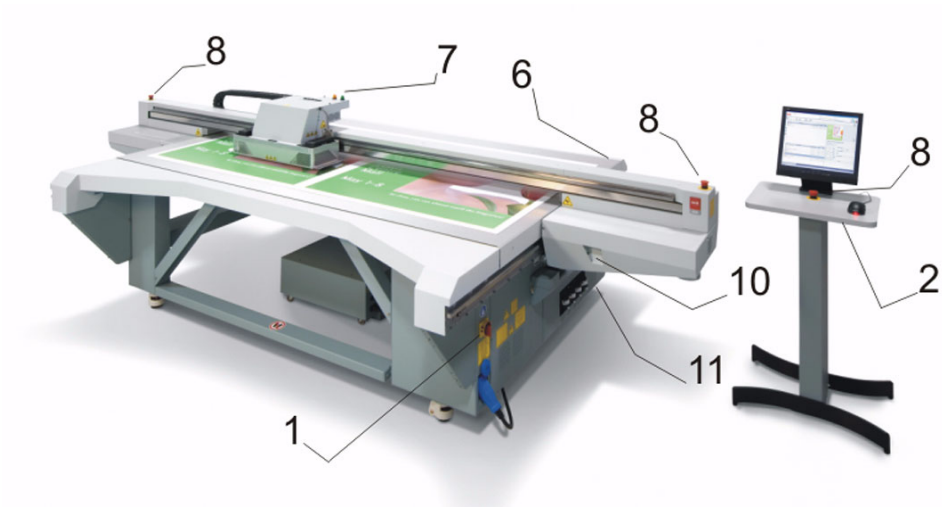
Crushing/Shear Hazard	
	Do not place your hand near the shaft drive motors when the printer is printing or when the dual foot controls are pressed.
	Do not place your hand on the Media Roll motor enclosure when the green beacon light is On as the gantry may move at any time.

Chapter 4
How to Navigate the User Interface

Operator Interface Hardware

Introduction

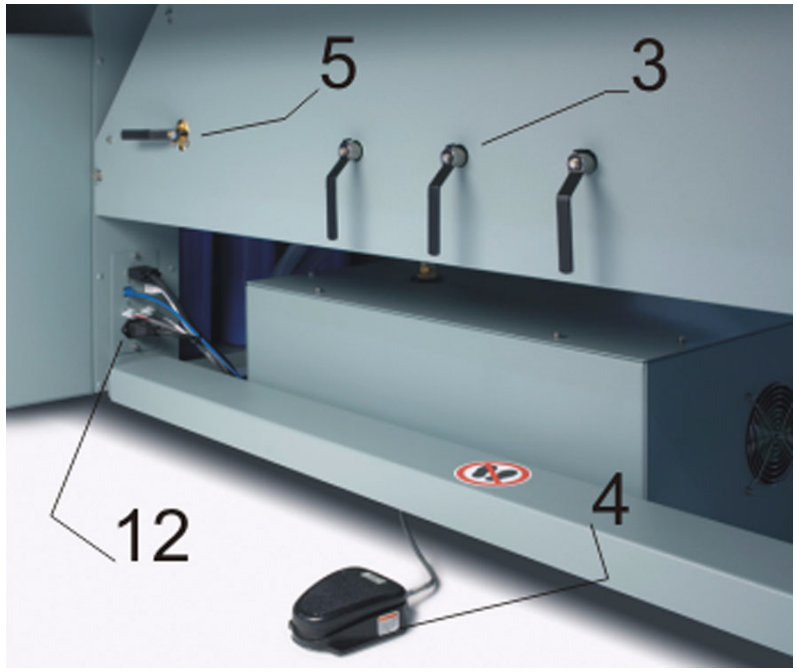
The Operator interacts with printer components to operate, maintain, and monitor the state of the printer: This section identifies and explains the functions of the hardware.



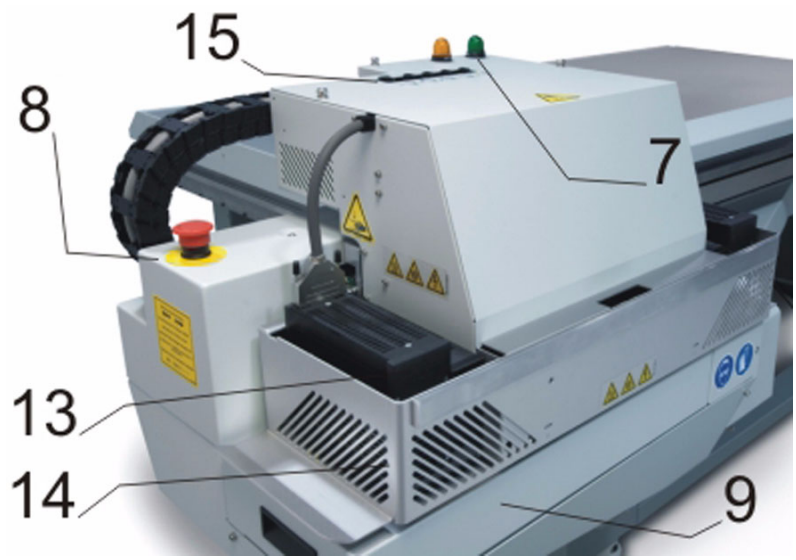
[32] User Interface Hardware

(1) Main Power Switch	(9) Maintenance Station
(2) Operator Control Station	(10) Coolant Reservoir Level
(3) Vacuum Zone Control Handles	(11) Ink Filters
(4) Vacuum Table Foot Pedal	(12) Control Station Panel
(5) Vacuum Bleed Valve	(13) UV Lamp Cartridges
(6) Print Button	(14) Carriage Guard
(7) Printer Status Light	(15) Purge Valves
(8) Emergency Stops	

Illustration



[33] Vacuum System Hardware



[34] Carriage Area Hardware

Operator Interface Components

[17] Hardware Interface Components (1 – 3)

Component	Function
1) Main Power Switch	The Arizona 200/250 GT has an AC power switch that turns the printer On and Off. The switch also serves as a lock-out device. It also has an AC power connector. All of these power-related items are located on the end of the electronics enclosure.
2) Operator Control Station	The operator control station consists of a podium stand, an LCD display monitor, a mouse, and an emergency stop button. The station allows the operator to control the printer's onboard computer system by way of the Operator Interface software displayed on the LCD monitor. Print jobs are sent to the printer's hard drive from the host computer over an Ethernet network.
3) Vacuum Zone Control	The three vacuum zone control handles determine which of the three print zones on the printer table will have vacuum applied when the vacuum pump is switched on. The vacuum zones are opened or closed by the handles.
4) Vacuum Table Foot Pedal	A vacuum foot pedal switch is provided to facilitate the process of securing the media on the vacuum table. The foot pedal toggles the table vacuum on/off. The vacuum must be turned on prior to starting a print.
5) Vacuum Bleed Valve & Gague	A bleed valve can be adjusted to reduce or increase the amount of vacuum suction on the media. Less vacuum reduces artifacts caused by suction when imaging on flexible media.
6) Print Button	The print button is located at the corner where media is loaded on the table. After positioning the media and activating the vacuum, press the button to start the print.
7) Printer Status Light	The green colored beacon light is mounted on the top surface of the carriage. The purpose of the light is to indicate basic machine status to the operator. See the table after this section for the significance of the different states of the light.

[17] Hardware Interface Components (2 – 3)

Component	Function
8) Emergency Stops	If a situation requires an immediate shutdown of all printer activity, press one of the three Emergency Stop buttons. To recover from an emergency shutdown, resolve the problem that prompted the shutdown and then release the Emergency Stop by twisting it slightly clockwise. Restoring functionality to all disabled systems can only occur through an operator command at the Control Station. See below for the parts of the hardware interface affected by an Emergency Stop.
9) Maintenance Station	Daily printhead maintenance consists of an ink purge and suction cleaning of the printheads. The maintenance station cover is slid open to access the printheads and the suction nozzle. The maintenance station is located under the carriage. Maintenance is performed when the carriage is parked at the end of the gantry.
10) Coolant Reservoir	The coolant reservoir is mounted at the service access end of the gantry. The operator has the ability to refill the reservoir and to monitor the level of coolant at this location. See Maintenance section for instructions.
11) Ink Filters and Ink Bay	The ink filters ensure that ink flows easily and is free of particulate matter. These filters must be changed periodically to ensure that they are working efficiently. See the Maintenance section, How to Change Ink Filters for a schedule and instructions. The Ink Bay contains 2 liter bags of each color (CMYK) of ink. The ink bay is located under the table in the corner where media is loaded. ID tags ensure the correct ink color is installed in the correct location and that expired ink is not installed. A warning is issued to the operator when a specific ink bag is empty and needs to be replaced.
12) Control Station Panel	This panel contains all of the receptacles for connections from the printer to the Operator Control Station. This includes power and video for the LCD display, an Ethernet network cable plug for communication and data transfer from the host computer, a cable to the Emergency stop and a USB cable for the mouse on the Control Station.
(13) UV Lamps	Two UV lamp are housed in cartridges to cure the ink. UV amps have a finite life and must be changed periodically.

[17] Hardware Interface Components (3 – 3)

Component	Function
(14) Carriage Guard	The Carriage Guard protects the Operator from exposure to UV light and it also protects the lamps and the carriage by stopping all motion if it encounters an obstacle in the path of the carriage.
(15) Vacuum Shut-off Valves	On top of the carriage are vacuum shut-off valves can be shut off to avoid ink drips when the printer is turned off. They also allow longer purges to select printheads (those not shut off).
(16) Waste Tray	The waste ink tray is located below the printhead maintenance station. A manual valve allows the operator to drain the waste ink to a portable container for disposal .

Status of Beacon Light States

The status light indicates the following printer status to the operator.

[18] Status Light

Beacon Status Light	Definition	Possible Conditions
Green Off	Printer interlock system or the emergency stop buttons have been triggered. No motion can be initiated.	Maintenance station door has been opened or one the emergency stop buttons has been triggered.
Green On	Printer is functional and ready to initiate motion.	

Emergency Stop Effects

Note: *There are three Emergency Stop buttons, one on the control station podium and one on each end of the gantry. The AC power On/Off switch can also function as an emergency stop. There are more details on the Emergency stops in the Interlock section (**see 'Interlock Safety System' on page 30**).*

Activating an Emergency Stop will disable the following:

- Carriage motion
- Gantry motion
- UV curing lamps
- Ink pumps
- Thermal fluid (coolant) pump

- Thermal fluid heater
- Purge pump
- Purge valve
- Printheads jetting

Operator Interface Software

Introduction

The Arizona 200/250 GT software interface is displayed on the LCD monitor that is part of the Operator Control Station. The interface has five main working modules that are accessed by tabs located at the bottom of the display. Click on these tabs with the mouse to access the modules. Print Job Control is the default module displayed when the software interface has finished loading after the printer is switched on or reset.

The Print Job Control display is divided into functional and status areas. The functional areas supports all operator input necessary to operate, maintain and service the printer. The status areas are used to report printer status.

Onscreen Keyboard & Numeric Keypad
A mouse is used as the input device. For operations that require operator input, the mouse is used to select either numeric characters from a virtual keypad or alphanumeric charaters from a virtual keyboard. These virtual input screens are displayed on the interface LCD monitor when data entry is required.

Illustration

[35] Interface Tabs

Operator Interface Module Tabs

[19] Interface Modules (1 – 2)

Component	Function
Print Job Control (Print tab)	Provides management of all aspects of working with print jobs. It also controls some features of the printer and provides access to Roll Media print controls (if that option is installed).
Printer Counters (Counters Tab)	Provides information about the amount of ink consumed, the amount of media printed and the number of print jobs started. Also provides counters for the UV lamp bulbs use.
Printer Settings (Settings tab)	Displays information about, and also allows you to change various aspects of the printer: Date and Time, Network Connections, User Interface, Printer Settings, and Roll Media Settings (if that option is installed).
Service and Diagnostics	This area is reserved for use by trained field service technicians only.

[19] Interface Modules (2 – 2)

Component	Function
Special Prints Special Prints tab)	Special Prints provides various special adjustment prints, ruler images, a quality control Reference print image, and the Nozzle Check print.
Software Upgrade (Upgrade tab)	Allows field service technicians to update the printer to the latest version of the Operator Interface software and firmware.

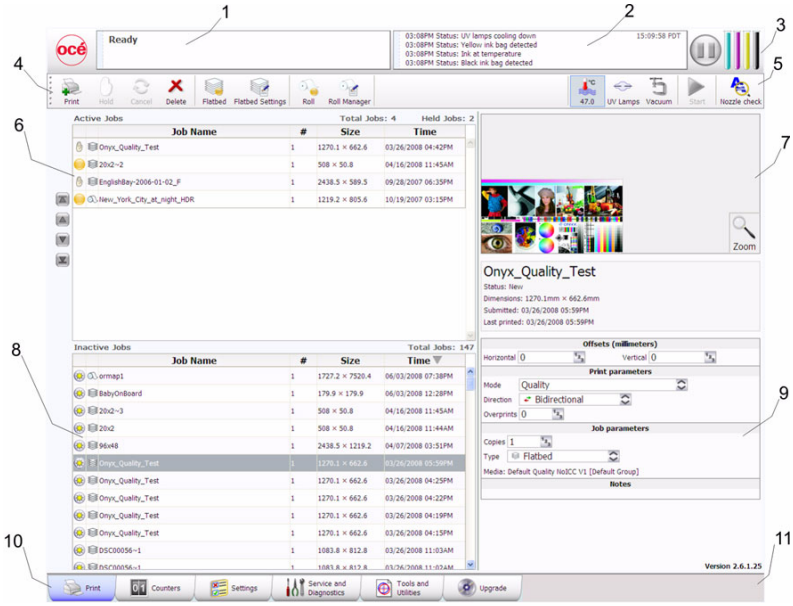
Print Job Control Module

Introduction

Print Job Control is the first module displayed when the printer software is loaded. From this module you can manage all aspects of working with print jobs and also control many features of the printer. The table "Job Control Panels" documents the numbered callouts and the rest of this section explains each area in more detail.

The Print Job Control display is divided into functional and status areas. The functional areas supports all operator input necessary to operate, maintain and service the printer. The status areas are used to report image and printer status.

Illustration



[36] Print Job Control

Components of the Print Job Control Module

[20] Job Control Panels

Component	Function
1) Job and Printer Status	Displays the status and progress of print jobs
2) Printer Messages Panel	Displays the last four lines of the log - click in this area to see more of the log.
3) Pause/Resume and the Ink System Status	To the right is the print job Pause/Resume button and the Ink System Status icon - click to view an ink status report.
4) Command Toolbar left	Displays icons for actions related to the print jobs and control of the printer.
5) Command Toolbar right	Displays icons for ink temperature, lamp control, start print jobs, and print a nozzle check.
6) Active Jobs List	Displays a list of all Active print jobs.
7) Job Placement Preview	Displays the selected print job with a preview that shows the placement of that job on the printer.
8) Inactive Jobs	Displays a list of all Inactive print jobs.
9) Job Information and Parameters panel.	This panel shows the parameters of the currently selected print job and also allows changes to the parameters associated with that job .
10) Interface Tabs	Use these tabs to select the different modules of the printer user interface.
11) Software Version Number and Image Upload Progress	Displays the current installed version of the printer software. The image upload progress panel indicates the name of a print job that is currently uploading to the printer. This panel is not always visible and appears only when an image is loading to the printer. It is located below the software version number when it is active.

Job Control Components Explained

1) Job and Printer Status Panel

The job status panel is in the top left corner of the display screen. It shows information about the current state of the printer or job activities.

- Printer Status
- Job name currently printing
- Total copies, number of printed copies and copy progress
- Overprint progress and number of overprints if more than zero

All incoming jobs go directly into the active session at the end of the job list. Selecting a job in the list highlights the job and updates the job information area. The job information area contains offsets, print quality mode information, number of copies and overprints, and the name of the ProductionHouse profile used and the image to be printed is also displayed.
Jobs can be moved up or down in the list and can either be printed, held or canceled.

2) Printer Messages (or Log) Panel

The printer status panel is in the top right corner of the display. It shows the last four lines of the printer log that contains printer errors, warnings, and information messages. To see more of the log, click on the panel to bring up a new window that allows you to scroll through the log.

3) Pause and Ink Status

Pause/Resume print button. This button can be used to pause or resume a print job. It is active only while a job is printing.

Ink System Status. Click the icon to open an ink system status dialog that displays ink-related information. This includes for each color of ink: an expiry date, ink type code, ink bag status, fill status (whether ink is being pumped into the reservoir), and whether the reservoir is full. The dialog also shows the current printhead temperature, the meniscus vacuum level, and the purge pressure.

4 & 5) Command Toolbar
The printer toolbar contains icons that allow you to interact with the printer (listed here in displayed order). Note that some of the buttons have a checked and unchecked state with a different appearance of the icon image.

[37] Command Toolbar

Print job	This command can do the following actions depending on context: ■ Activates a selected inactive job by moving it to the active list. ■ Un-holds a held job. ■ Un-holds an job that had an error currently.
Hold job	The command can do following actions depending on context: ■ Puts an active job on hold. ■ Waits until the printer finishes a currently printing copy and puts the job on hold.
Cancel job	The command can do following actions depending on context: ■ Deactivates a selected active job by moving it to the inactive list. ■ Cancels a currently printing job and moves it to the inactive list.
Delete job	Deletes a job from the printer. However, you cannot delete a job that is currently printing.
Flatbed icon	Process flatbed jobs toggle command - Allows printer to process flatbed jobs. This must be selected to enable flatbed printing when the printer is booted or after re-setting the printer due to an error.

Flatbed Settings icon	A dialog window automatically appears when confirmation is required. If it is closed before you select Confirm, it can be reopened by clicking on this icon. **Media Parameters** Enter or confirm the thickness of the media. The printer will automatically adjust the carriage height to media thickness and also the print gap. Media thickness confirmation is required only for the first copy of a print job, unless it is changed during printing. If the media thickness value is changed while printing, confirmation is requested before printing the next copy. If you use a media underlay (*Underlay Board to Reduce Artifacts* on page *97*) click on that box to add its thickness to the overall media thickness. If the underlay has a different thickness than the one shown, then change that value in the Roll Settings dialog in the Settings module. **Lamp Power Control** Allows the operator to control the power output of each UV lamp independently. To extend lamp life, use the lowest setting that provides adequate curing for a particular media. Leading and Trailing Edge are relative to the direction of carriage travel. They can be set independently if that function is selected in the User Interface dialog in the Settings module.
Roll icon	Click on the Roll icon to enable or disable the Roll Media Option print queue (this allows you check media parameters before the job actually prints). Roll media print jobs will not print unless this icon is selected. **Note:** *Roll media print jobs do not require explicit user actions to start the print job once it is initialized, this icon is selected, and the job status is not on Hold.*
Roll Media Manager icon	The Roll Media Manager allows the operator to load and unload media and to initialize the printer so that the tension on the roll media is set and the job is ready to print.
Ink Temperature Control	This button controls the ink heater and also displays the ink temperature. The state of the button reflects the status of the ink heater. The heater times out after two hours of inactivity (time can be changed up to four hours by a service technician). If the ink heater is turned off when timeout expired, then the button changes its status to unchecked. The print heads must be at operating temperature (47°C - 116°F) before a job will start printing.

UV Curing Lamp Control Button	This button controls the UV curing lamps. The state of the button reflects the state of the lamps. The UV lamps will timeout after 15 minutes of inactivity (time can be changed by a service technician). If lamps are extinguished when the timeout expired, then the button change its status to unchecked. If lamps are off before the print starts, then lamps are turned on automatically and the button would reflect the state accordingly.
Table vacuum button	This button controls the table vacuum and duplicates the function of the table vacuum foot switch. The button reflects the actual state of the table vacuum. There is an automatic timeout that will turn the table vacuum off. The actual time is set in the Settings module under printer. **Note:** *Once turned off, vacuum cannot be turned on again for approximately 5 seconds.*
Start Button	This icon can be used to start a flatbed print job (same function as the physical button on the table).
Nozzle check	This button populates the active job list with a job that prints a nozzle check pattern. The nozzle check print is used to identify nozzle dropouts that can cause banding and other print quality problems, Print a Nozzle Check.

6) Active Print Job List

The active job list consists of a table, job count summary on top and job order control buttons on the left. A job count summary displays total number of active jobs and number of jobs put on hold. Job order control buttons can be used to change order of jobs queued for printing. The active job list has the following features:

- All incoming jobs issued from the ONYX ProductionHouse workflow go directly into the active job list.
- After a job is printed it automatically moves from the active to the inactive job list.
- The operator can drag and drop jobs to move them between the active and inactive job lists (except for a job that is being prepared to print).
- All the jobs are stored locally on the printer hard drive.
- Selecting a job highlights the job and updates the job information area.
- Jobs can be moved up/down in the active list and can either be printed, held, cancelled or deleted. Jobs cancelled from the active list are moved to the inactive list.
- Deleted jobs are removed from the hard drive and are no longer accessible.
- The current job being printed can be paused or canceled. A canceled job will move from the active to the inactive print job list.
- A job count summary displays the total number of active and inactive jobs and the number of active jobs on hold.

7) Job Placement Preview
The table placement preview shows the print location and a proportional representation of the image in relation to the table. The zoom button in the bottom right corner activates a popup preview window. If a preview image is not available, an approximately sized white box is used as a placeholder, and the zoom button is not displayed.

The preview image can be positioned by dragging it around the window (this will automatically update the offsets fields). When an image is out of bounds in the actual table area, that area in the table preview is marked in red.

When an image is out of bounds in the bleed region, that area of the table preview is marked in yellow.

Roll media print jobs will display only the middle part of the image if it does not fit in the window. They can't be repositioned by dragging in the window.

8) Inactive Print Job List
Inactive job list consists of a table and job count summary on top. A job count summary displays total number of inactive jobs. The list can be sorted by clicking on the appropriate column header. The icons in the first column reflect the job type and status and can be use to sort the list. The size column is sorted by image area. Date column is sorted by a compound value of date and time. The inactive job list has the following features:

- The operator can drag and drop jobs to move them between the active and inactive job lists.
- Jobs deleted from the inactive list are deleted from the hard drive.

9) Job information and parameters panel
The job information area displays only relevant job parameters of the current print job. For example, the Overprints field is not displayed for roll media jobs. Some of the parameters may be modified.

Offsets	A job's vertical and horizontal offset parameters can be changed with the mouse wheel when mouse cursor is positioned over the field. Rotate the mouse wheel up or down increments or decrements offset at the rate of one unit per notch. Hold the right mouse button and rotate the wheel increments or decrements at the rate of 10 units per notch. An alternate method to change parameter values is to click on the field and this brings up an onscreen keyboard so you can click on the numbers required.
Print Parameters	Displays information about the print job that is currently selected: ■ **Mode** - Print quality mode: Select Production, Quality, or Fine Art mode in ProductionHouse. When Quality mode is set, this field will have a pull-down box that allows you to select Quality-Matte or Quality-Density. **Quality-Matte** provides a matte finish to the entire image. This is helpful on some media such as FomeCore, GatorPlast or Styrene as a glossy image tends to have a matte line at the end of each swath with these media. Quality-Matte resolves this issue. **Quality-Density** provides more density for backlit media. This is most useful when you print on roll media, since Overprint is only possible on flatbed jobs. Also for flatbed media that may warp or move slightly from the heat of the lamps, the Density mode will reduce that because it is done in one pass. ■ **Direction** - Bidirectional and Forward or Reverse unidirectional printing ■ **Overprints** - If the Overprint count is set to greater than 0 (zero), the printer will re-print the image again on the same piece of media. ■ **Copies** - use the mouse to increase or decrease. ■ **Type** - Print Method - Flatbed or Roll. ■ **Media** - Media that was selected in ProductionHouse. ■ **Notes** - Appears only if a note was specified for the job. Notes are entered in ONYX ProductionHouse.

10) Printer Interface Module Tabs

These tabs allow you to switch between different functional modules of the printer. Click on a tab to display the screen associated with each of the modules available.

11) Software Version Number and Image Upload Progress

Displays the version of the currently installed printer software.

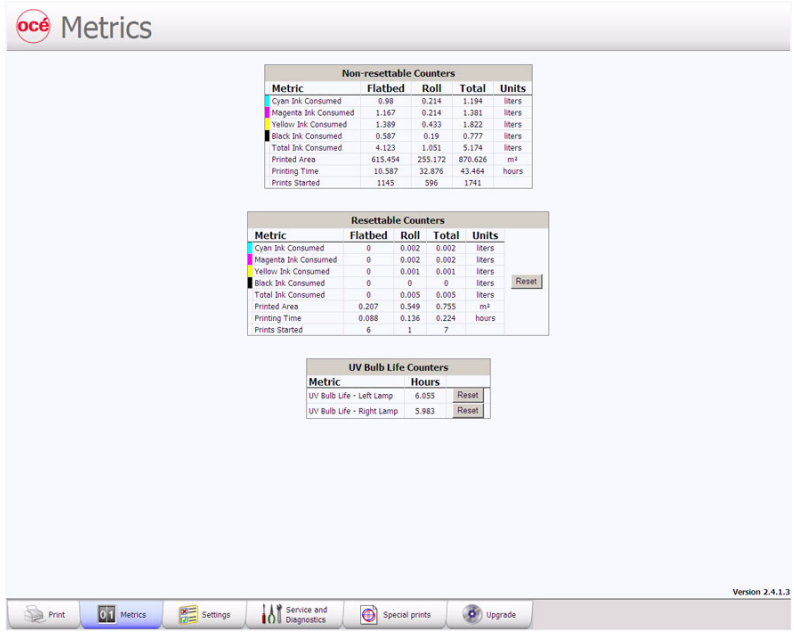
The image upload progress panel indicates the name of a job that is currently uploading to the printer. This panel only displays information while an image is transferred from the ProductionHouse computer.

Counter Module

Introduction

The Counter module displays counters that are of interest to the operator. It shows counters for each color of ink and the total ink used. It also shows the number of hours a UV lamp was used since last changed. Some of the counters can be reset.

Illustration


Metrics
Non-resettable Counters
Metric Flatbed Roll Total Units
Cyan Ink Consumed 0.98 0.214 1.194 liters
Magenta Ink Consumed 1.167 0.214 1.381 liters
Yellow Ink Consumed 1.389 0.433 1.822 liters
Black Ink Consumed 0.587 0.19 0.777 liters
Total Ink Consumed 4.123 1.051 5.174 liters
Printed Area 615.454 255.172 870.626 m²
Printing Time 10.587 32.876 43.464 hours
Prints Started 1145 596 1741
Resettable Counters
Metric Flatbed Roll Total Units
Cyan Ink Consumed 0 0.002 0.002 liters
Magenta Ink Consumed 0 0.002 0.002 liters
Yellow Ink Consumed 0 0.001 0.001 liters
Black Ink Consumed 0 0 0 liters
Total Ink Consumed 0 0.005 0.005 liters
Printed Area 0.207 0.549 0.755 m²
Printing Time 0.088 0.136 0.224 hours
Prints Started 6 1 7
Reset
UV Bulb Life Counters
Metric Hours
UV Bulb Life - Left Lamp 6.055 Reset
UV Bulb Life - Right Lamp 5.983 Reset
Version 2.4.1.3
Print
Metrics
Settings
Service and Diagnostics
Special prints
Upgrade

[38] Printer Counters

Component - function table

[23] Counters Explained

Component	Function
Non-resettable Counters	These counters display a cumulative total of ink consumed or area printed over the whole life of the printer.
Resettable Counters	These counters display a cumulative total of ink consumed or area printed since the Reset button was last pressed. Time and date of last reset is displayed, if available.
UV Bulb Life	Displays the hours of lamp use since last reset. Always reset the count when you change a bulb.

Settings Module

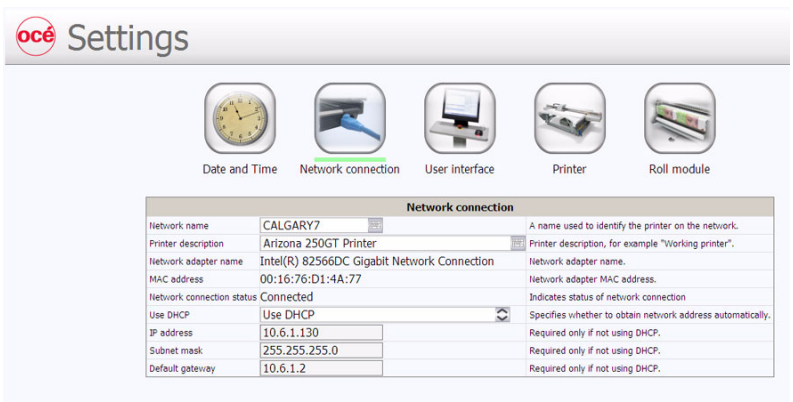
Introduction

The Settings Module allows you to review and change the date and time, network connection settings, user interface configurations, printer settings and, if installed, the Roll Media settings.

Date and Time Settings

[39] Date and Time

- Date - display only, cannot change the date.
- Time - change the time of day, if required.
- Time Zone - select the time zone for the printer location.



[40] Network Connections

Network Connection Settings

Note: *Typically, DHCP is used to automatically obtain network settings. If "Use DHCP" is selected, the only thing you might want to change is the network name of the printer. The settings are displayed to troubleshoot possible network connection*

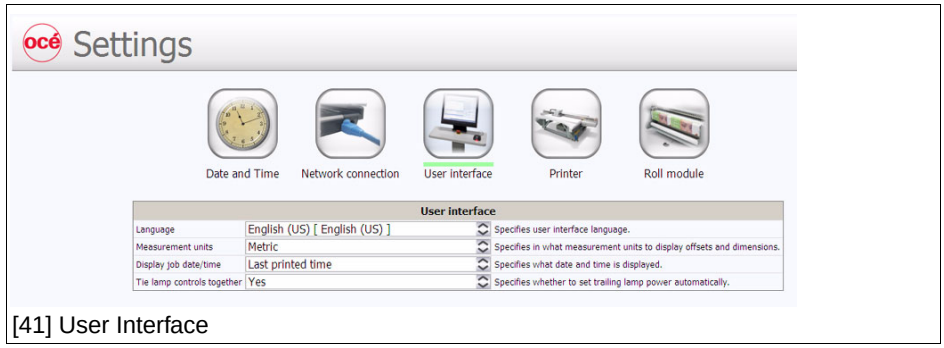
problems. One situation that would require changes is if your network does not use DHCP to automatically obtain network settings. In this case network settings have to be entered manually. If you don't know how to do this, bring in a network consultant to determine what the setting must be for the network (alternately, you can purchase a DHCP router for your network that will automatically supply the network settings).

- Network Name
- Printer Description
- Network Adapter Name
- MAC Address
- Network Status
- Use DHCP
- IP Address
- Subnet Mask
- Default Gateway

Note: *If the Ethernet network cable is disconnected, you will not be able to set up the DHCP or the Static Network Address.*

Note: *A network name for the printer cannot consist of numeric characters only - it must be a mix of alpha-numeric characters.*
If the Printer name is changed, the printer must be restarted for the change to take effect.

User Interface Settings



[41] User Interface

Languages Supported
The user interface can be set to display the following languages:

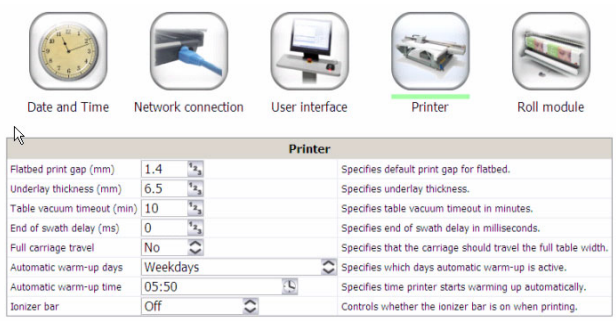
- English - US
- English - UK
- German

- French
- Dutch
- Japanese
- Italian
- Spanish

Measurement Units
Allows you to specify how to display offsets and dimensions units:

- Metric
- Imperial

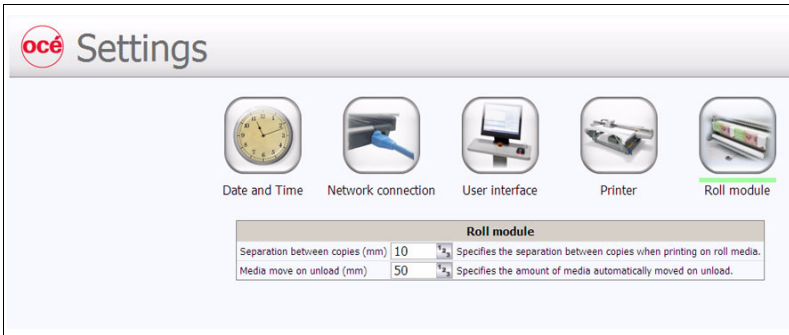
Printer Settings


Date and Time
Network connection
User interface
Printer
Roll module
Printer
Flatbed print gap (mm) 1.4 Specifies default print gap for flatbed.
Underlay thickness (mm) 6.5 Specifies underlay thickness.
Table vacuum timeout (min) 10 Specifies table vacuum timeout in minutes.
End of swath delay (ms) 0 Specifies end of swath delay in milliseconds.
Full carriage travel No Specifies that the carriage should travel the full table width.
Automatic warm-up days Weekdays Specifies which days automatic warm-up is active.
Automatic warm-up time 05:50 Specifies time printer starts warming up automatically.
Ionizer bar Off Controls whether the ionizer bar is on when printing.
[42] Printer Settings

Allows you to set the following:

- Flatbed print gap
- Underlay thickness
- Table vacuum timeout
- End of swath delay
- Full carriage travel
- Automatic warmup day
- Automatic warmup time
- Ionizer bar (static suppression - On or Off)

Roll Module



[43] Roll Media Settings

Separation Between Copies
Specifies the separation in the selected measurement units.

Media Move on Unload
Specifies the amount of media moved on unload in the selected measurement units.

Note: *This setting icon is displayed only if the Roll Media Option is installed.*

Special Prints Module

Introduction

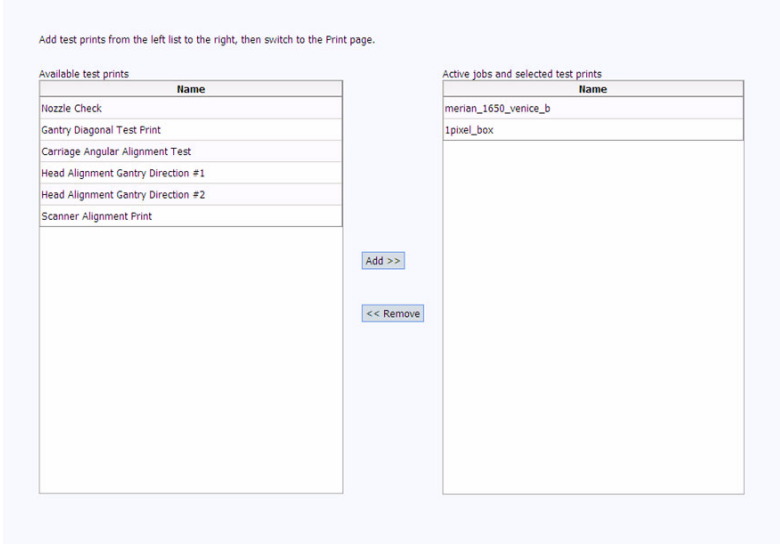
The Special Prints sub-module displays two lists. The list on the left shows the available special prints. Some of these prints are used by service technicians to adjust and troubleshoot the printer. Some are of interest to the Operator: the Reference print, the table ruler prints, the Nozzle Check print, and the Media Advance Correction Factor print.

Special Prints of Interest to the Operator

- the Reference print is used to determine that the printer output meets quality standards. A reference print that is printed at the Océ Display Graphics Systems factory is shipped with each printer. It can be used as a comparison with one printed at the customer site.
- The Table Rulers are meant to be printed on the table to assist you to place media. These images are set up to print on the horizontal and vertical axes of the table. They are available in metric or imperial measure.
- The Nozzle Check is used to determine if there are any clogged nozzles that can affect print quality (note that it is also available on the command toolbar in the Print Job Control module).
- the Media Advance Correction Factor print (used for roll media only). This print is used to correct a certain type of banding related to incorrect media advance - see How to Determine Media Advance Correction.

The list on the right shows all active jobs that are currently in the print queue. Add a print from the left into the right list to make it active in the Print Job Control module. If you remove a job from this list, it is also removed from the Active job list and is not available to print.

Illustration



[44] Special Prints Module

How to Load a Special Print

1) Click a special print to select it in the left window.
2) Click the Add button to place it in the print queue on the right.
That special print is now available in the Active job list.

How to Print a Special Print

Go to the Print Job Control module to actually print the special print. It will appear in the active job list and is printed like any other print job.

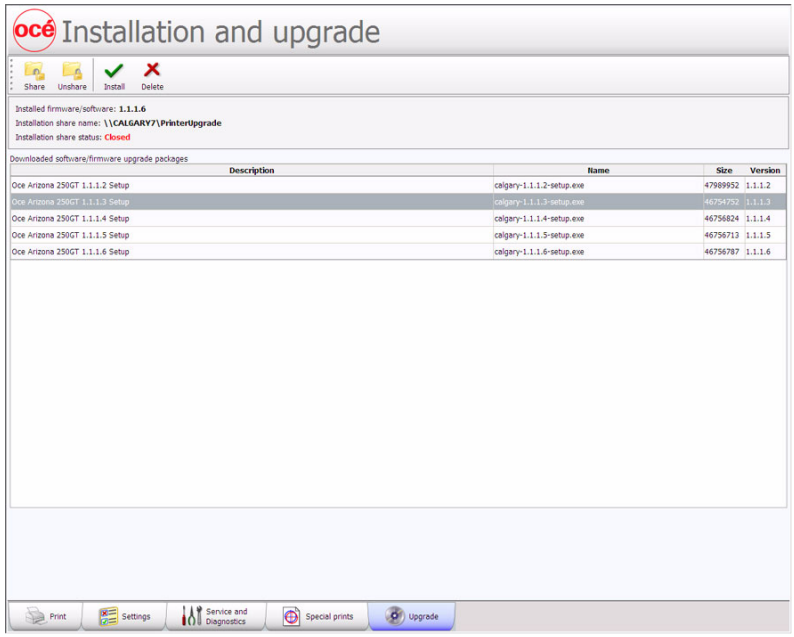
Note: *Refer to the sections that document the special prints for details on printing. For example, the Nozzle check and the Reference print are printed on I/O paper, while the Ruler Guide Print is printed directly on the table.*

Installation and Upgrade Module

Introduction

As we are committed to improve and refine the quality and functionality of the Arizona 200/250 GT printer, there will be periodic upgrades to the underlying firmware and printer software. Software updates are available only to customers with a service contract. Your local service representative will either install the upgrade or provide you with the upgrade file in some circumstances.

Illustration



[45] Printer Upgrade Module

How to Upgrade the Firmware and Software

Your dealer or service representative will advise you when an upgrade of the printer software is necessary. If they request that you install the upgrade, instructions will be provided with the upgrade file.

Chapter 5
How to Operate the Arizona 200/250 GT

Training Requirements

Introduction

The operator must receive training for safety, printer operation, and ProductionHouse® software prior to operating the Arizona 200/250 GT printer.

Safety Training

Before operating the Arizona 200/250 GT printer, make sure you have read and understood all of Chapter 3 "Safety Guidelines".

Océ Operator Training

For optimal safety and print quality, all Arizona 200/250 GT printer operators must have received training by qualified Océ service personnel. Océ training provides a general orientation to printer safety and operating procedures. This User Manual is not a substitute for official training.

Onyx ProductionHouse Training

Maximum performance from the Arizona 200/250 GT printer requires a properly trained operator. Océ trains the operator in the use of the printer hardware and software at installation. However, this is not a substitute for formal ProductionHouse® training.
Operators of the Arizona 200/250 GT should be fully versed in the operation of Onyx ProductionHouse® . For any operator unfamiliar with its operation, Onyx ProductionHouse® training is required. Training courses are available; contact your local representative for an Onyx-certified training program.

Note: *PosterShop is not capable of producing profiles for color management with the Arizona 200/250 GT and also does not have the layout editor capabilities of ProductionHouse. Also, if you use PosterShop the Arizona 200/250 GT printer driver must be purchased (it is included at no cost with ProductionHouse). Therefore we recommend that customers not use PosterShop with this printer.*

How to Power the Printer On and Off

Introduction

This section describes how to switch the printer On and Off. When the printer is switched On, the Arizona 200/250 GT software is displayed on the LCD flat panel monitor. The monitor is located on the Operator Control Station. From there the operator can access and control the printer Graphical User Interface Display. When the printer is switched Off for long periods, there are things to consider that are documented in this section.

Before you begin

Before you apply AC power to the printer, make sure that loose objects such as clothing, tools and cleaning materials are not interfering with the printer mechanisms. Position the power cord so that it does not pose a hazard when walking around or moving media or other objects near the printer. The Arizona 200/250 GT has an AC power switch that turns the printer On or Off. The switch also functions as an AC power lock-out switch. It is located at the Power end of the printer.

Caution: THE SOCKET OUTLET MUST BE INSTALLED NEAR THE EQUIPMENT AND BE EASILY ACCESSIBLE. Ensure that you follow the guidelines in the Arizona 200/250 GT Site Preparation Guide before plugging the printer AC power plug into the socket.

Attention: Unplug the blue power cord from the printer to completely isolate the electronics of the printer, especially when you move or service the printer.

How to Power ON

1. Ensure that the blue AC power plug is properly seated.
2. Turn on the AC power On/Off switch.
3. If it is not already on, turn on the power of the Control Station LCD display.
4. During the boot-up procedure, the printer operating system is loaded and the User Interface software is automatically started. The software displays a splash screen followed by a screen that requests you to raise and then lower the carriage guard.
5. Walk over to the carriage and lift the aluminum guard slighty and then replace. Walk back to the control station and click on Continue to finish the boot-up procedure.

[46] AC Power Switch

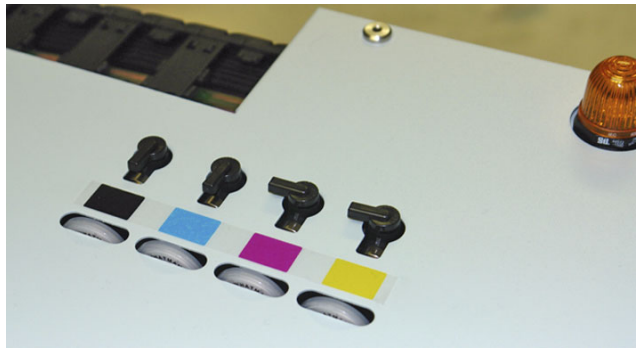
6. The splash screen will show some further initialization messages and then the initial Job Control module screen appears. The initialization is complete when the top left panel of the display shows "Ready". Your printer is now ready for use.

Attention: After powering the printer On, leave it running continuously, even when at idle. Failure to leave the printer powered on may result in ink draining out of the ink reservoirs.

Note: *The printer is designed to be left powered ON at all times as only minimal power is consumed when the printer is idle.*

How to Power Off

1. Turn the AC power switch to the OFF position.
2. Close the vacuum shut-off valves on top of the Carriage ink reservoir to prevent the ink from draining out and filling the waste tray.



[47] Vacuum Shutoff Valves (Magenta, Yellow are Off - Black, Cyan still ON)

3. Open the vacuum shutoff valves again when the power is turned back on.

Note: *Extended Power Off*
If the power is switched off for only a short period (for example, when the printer is shut down and then immediately restarted to correct an electrical problem), it is not necessary close the ink valves. However, if it is necessary to turn off the power for an extended period, then close all of the ink valves to prevent the ink from draining. Also if the printer is powered off for more than one day, perform a Printhead Maintenance and Swab the heads before power is turned off.

How to Lock Out the Power Switch

Attention: Some simple maintenance and service procedures require locking out the On/Off switch to ensure operator safety. When the switch is locked out, it is impossible to supply power to the printer.

1. Turn the AC power switch to the Off position.
2. Apply a lock and a tag-out label to the Lock-out area of the switch for the duration of any service or maintenance procedures.
3. Close the shutoff valves on top of the Carriage ink reservoir to prevent the ink from draining into the maintenance Station.
4. Open the shutoff valves again when the power is turned back on.
5. When maintenance or service is complete, remove the lock and tag-out label and turn the AC power switch to the On position.

Illustration

[48] AC Power Switch and Lockout

How to Use the Disconnect Device

Attention: The AC power switch is the main disconnect device for the printer. For maximum safety, if the printer is moved, the blue AC power plug must first be unplugged from the printer.

1. Follow the Lock-out procedure above.
2. For additional safety, also disconnect the blue power plug.
3. When the printer is successfully moved or the repair work is complete, re-connect the power plug and unlock the AC power switch.

How to Install the Onyx Printer Driver

Introduction

This section explains how to install and configure the Onyx ProductionHouse Arizona 200/250 GT printer installation file.

Purpose

The printer installation file configures the Onyx software so that it knows how to communicate with the Arizona 200/250 GT. This prepares the printer so that the operator can manage print jobs.

Before you begin

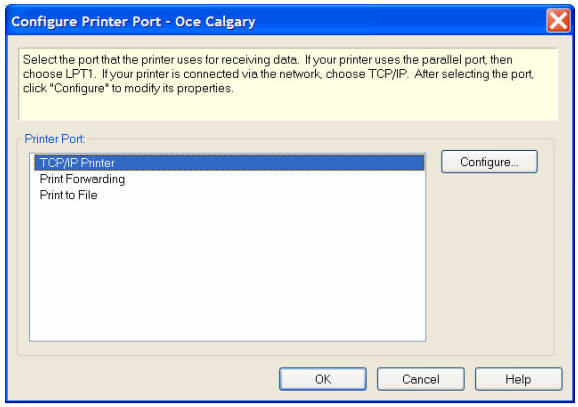
Make sure that the Onyx ProductionHouse application software is installed before you install the printer driver.

Note: *The Onyx Printer Installation Driver File can be installed as the final step in the installation of the Onyx ProductionHouse software application or it can be downloaded separately and installed later. However, it must be available for the software to communicate with the printer.*

Installation Procedure

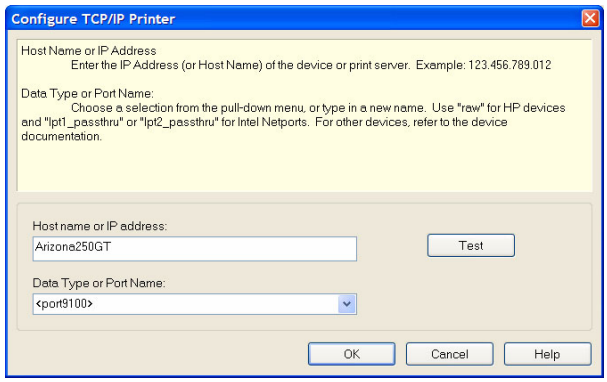
1. Power on the printer.
2. Select the Setup tab in the printer software to access the printer's network name.
3. Verify that there is an Ethernet network connection between the ProductionHouse computer and the printer. To do this click on the Windows Start button the select My Computer, My Network Places and ensure that the network name for the Arizona 200/250 GT is on the list.
4. Install the Arizona 200/250 GT Printer Installation File on the ProductionHouse computer (if you have not already done this during the installation of the ProductionHouse software). To install, click Start, All Programs, then ProductionHouse and select Add Printer.
5. Select the media to be installed and continue with the installation.

6. After the printer driver is installed the Configure Printer Port window will launch automatically. Select **TCP/IP Printer** then click on **Configure**.


Configure Printer Port - Oce Calgary
Select the port that the printer uses for receiving data. If your printer uses the parallel port, then choose LPT1. If your printer is connected via the network, choose TCP/IP. After selecting the port, click "Configure" to modify its properties.
Printer Port:
TCP/IP Printer
Print Forwarding
Print to File
Configure...
OK
Cancel
Help

[49] Configure Printer Port

7. Enter the Network name of the printer (as displayed in Step 3) and make sure <Port 9100> is selected for the port.


Configure TCP/IP Printer
Host Name or IP Address
Enter the IP Address (or Host Name) of the device or print server. Example: 123.456.789.012
Data Type or Port Name:
Choose a selection from the pull-down menu, or type in a new name. Use "raw" for HP devices and "lpt1_passthru" or "lpt2_passthru" for Intel Netports. For other devices, refer to the device documentation.
Host name or IP address:
Arizona250GT
Test
Data Type or Port Name:
<port9100>
OK
Cancel
Help

[50] Configure Printer Host Name

Note: *If you have more than one Arizona 200/250 GT printer, each printer must have a unique network name. The network name can be changed in the Settings module of the printer User Interface.*

Check Configuration

Click on Test to verify that the computer and printer are in communication.
If the Test was successful, a verification message is displayed to indicate a Valid IP address was found.

Correction

1. If no valid IP address is found, check that the network name of the printer is correct and that port 9100 was selected.
2. Run the Test again.

Result

When a Valid IP address for the printer is verified, click on OK to complete the configuration of the communication link between ProductionHouse and the Arizona 200/250 GT printer.

How to Manage Print Jobs

Daily Start-up and Shut-down

Introduction

Keep your printer clean and perform all recommended scheduled maintenance to ensure that the printer is ready to produce optimal quality images.

When to do

The start-up procedure must be performed every morning or after a period of time when the printer has not been used. The shut-down procedure indicated here is for the end of a regular workday. If the printer is shut down for longer periods of time than a few days, then there are more considerations, as documented in the previous section on How to Switch the Printer Off (see the note on Extended Power Off).

Before you begin

Review the sections on hardware and software interface if you are not familiar with the Command Toolbar and other components mentioned in this section.

Note: *Make sure the ink is up to temperature before you perform Printhead Maintenance.*

Start-up Procedure

1. Turn on the Ink Heater (click on the Ink Temperature Control icon located on the Command Toolbar of the Job Control screen).
2. Clean the carriage underside ((see ‘*Clean Carriage Underside*’ on page *153*)
3. Perform Printhead Maintenance Printhead Maintenance) after the ink temperature has reached at least 40° Centigrade.

Shut-down Procedure

1. Turn off the UV lamps (click on the lamp icon located on the Command Toolbar of the Job Control screen).
2. Turn off the table vacuum.
3. If it is the end of the work week, swab the printheads ((see ‘*Swab Printheads*’ on page *155*)
4. Turn off the ink heater (click on the Ink Temperature Control icon located on the Command Toolbar of the Job Control screen).

How to Set Up a Print Job

Introduction

This section explains how to select an image to print on the Arizona 200/250 GT. The basic steps are outlined here and explained below. More detailed explanations for some of these steps are available Job Control Module.

- Prepare A Digital Image Using Onyx ProductionHouse
- Print The Job From Onyx ProductionHouse To The Arizona 200/250 GT Printer
- Perform Printhead Maintenance (If First Print Of The Day)
- Select Job To Be Printed and Check Print Parameters
- Measure Media Thickness
- Select Print Icon, select Print Mode, and Confirm Media Thickness
- Prepare Media for Printing
  Place And Register Media On The Printer Vacuum Table
  Select Active Print Zones
  Mask Active Vacuum Zones Not Covered With Media
  Turn On Table Vacuum
  Adjust Bleed Valve, If Required
  Clean Media, If Required
- Check the table to make sure that there are no obstacles that can interfere with the travel of the gantry or carriage
  Start the Print

Prepare a Digital Image with ProductionHouse

Operator must be trained to use ProductionHouse, (documentation and training provided by Onyx).

Print The Job From Onyx ProductionHouse

When the job is sent from ProductionHouse, the job transmission progress is indicated in the lower right corner of the User Interface display. After the transmission has completed it will appear in the list of Active print jobs in the Job Control Module.

Perform Printhead Maintenance (if this is the first print of the day)

Refer to the Maintenance section in this manual for details Printhead Maintenance. This must be done at the beginning of the work day or when image quality such as banding appears.

Measure Media Thickness

Use a digital slide caliper or micrometer to accurately measure the media thickness of the media. An error in measurement of media thickness will affect bi-directional alignment and can contribute to the amount of graininess in the printed image or cause a carriage/printhead crash with the media.

Set the Printer to Flatbed

Select the Flatbed button on the toolbar to prepare the printer. This is required only when the printer is initially started, or if it is reset due to an error condition.

Select Job To Be Printed, Check Print Parameters And Verify Media Thickness

Click on the job to be printed from the active job list to select it. After it is selected the parameters on the job information and parameters panel will be displayed and may be modified if desired. Refer to the section Graphical User Interface Display for details on what is displayed and how to modify the job information.

Select Print Icon, Print Mode, and Confirm Media Thickness

When you select the Print toolbar icon it will gray-out the icon and the hand icon to the left of the job to be printed will turn green.
When printing Flatbed mode and Flatbed icon on the command toolbar is not selected, select it. Similarly, if printing in roll mode and the Roll icon is not selected select it.
The print job's icon should change to red/orange, and also the Pause icon and Confirm thickness buttons should appear in the command toolbar right beside Media thickness field.
Enter the measured media thickness value in indicated measurement units.
Select the 'Confirm thickness' button.

Prepare Media for Printing

Place And Register Media On The Printer Vacuum Table
Place the media on the table in the orientation that matches the job to printed and register the media to the print origin. In the next section there are more details on how to perform the following actions (see '*The Media Vacuum System*' on page *86*).

Select Active Vacuum Zones
Select the required vacuum zones to hold the media to the table using the table vacuum. The three vacuum zone control handles control which of the three zones on the printer table will have vacuum applied when the table vacuum pump is turned on. The vacuum zones are opened or closed using a quarter turn handle. Refer to the next section for details on the dimensions and placement of the vacuum zones How to Create Custom Vacuum Zones.

Mask Active Vacuum Zones Not Covered With Media

To hold the media to the table it is important to completely cover active vacuum zones with either the media to be printed on, or a masking material. The masking material should not be thicker than the media to be printed on. If a full bleed image is to be printed, the masking material should be the same thickness as the media to be printed on to prevent overspray from accumulating on the print head nozzle plates.

Turn On Table Vacuum

Click on the Vacuum button in the top right corner of the UI display to activate the table vacuum. Also a vacuum foot pedal switch is provided to help secure the media on the table vacuum. Step on the foot pedal to toggle the table vacuum on or off.

Note: *When the vacuum is switched off, wait a few seconds before you switch it on again.*

Adjust Vacuum Bleed Valve, If Required

A bleed valve can be adjusted to reduce or increase the amount of vacuum suction on the media. Less suction reduces artifacts caused by the suction when imaging on flexible media. In most cases when printing on rigid material, full vacuum suction is desired.

Clean Media, If Required

If the media is dusty or dirty, clean it with an appropriate cleaner. If using a liquid like isopropyl alcohol, allow sufficient time to dry prior to imaging.

Start Print

The Print button is located at the corner of the table where media is loaded. Press the Print button to start the print job. If the job was selected, the media thickness confirmed and the vacuum is turned on, printing will start after the ink and lamps reach operating temperature.

Note: *When the ink is at a low room temperature it may take up to 20 minutes for it to warm up to operating temperature. The printer will not print until the ink warms up. Also, when the printer is idle it will maintain the ink at operating temperature for two hours.*

Note: *The image is printed towards the print origin instead of away from it (i.e., the last data line to be printed is the line at the print origin). The reason the image is printed in this direction is to allow the gantry to lead the image in the print direction so it does not block the image when it starts printing. Also it reduces the time it takes for the gantry to start the print.*

How to Manage the Media Vacuum

The Media Vacuum System

Introduction

The Arizona 200/250 GT uses a low-flow, high-vacuum system to secure rigid media for printing on the printer table. A fabricated aluminum overlay sheet placed on the surface of the table creates the vacuum field. The overlay sheet is pin-registered to the table. A rotary vane vacuum pump is used to evacuate the chamber of air between the sheet and the table. Three air-feed ports connect the chamber to the vacuum pump through a series of manually operated flow valves. These valves are used to activate or shut down the different vacuum zones. In order for the system to work effectively during printing all the circular pockets on the top surface of the overlay sheet connected to an active vacuum chamber must be covered. This creates a closed vacuum system. A bleed valve is provided to adjust the level of vacuum, if so desired.

Vacuum Overlay Sheet

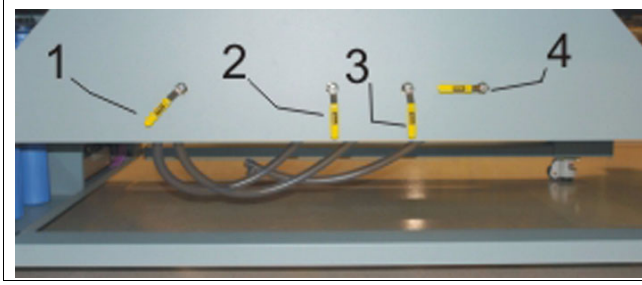
The vacuum overlay sheet is supported on the table by 0.5mm diameter formed half-shear features. This produces a small gap between the sheet and the top of the table for air to flow. Foam tape applied around the perimeter of the sheet provides an edge seal. Additional foam tape can be used within the perimeter to create up to three custom vacuum zones. The 0.5mm diameter half-shear feature creates the equivalent of a counter-bored hole or circular pocket on the top surface of the panel. Each of these pockets is connected to the sealed underside of the panel by 1.5mm diameter punched holes.

Default Vacuum Zones

The printer is shipped from the factory configured with one large vacuum zone that accomodates the maximum media size. There are two suggested custom vacuum zone configurations, one for Metric and one for Imperial units. These zones can be set up for common media sizes, and can be modified with additional foam tape. The next section has more information on how to create custom zones How to Create Custom Vacuum Zones .

Illustration

1 - Bleed Valve partly open	2 - Left Zone is Open	



	3 - Top Zone is Open	4 - Right Zone is Closed		

[51] Vacuum Zone Controls

Vacuum Zone Control Handles

These controls are meant for use with custom vacuum zones. If you only use the factory default of one large zone, make sure all three handles are left in the open position. When you create custom zones the three control valves are used to control which zones of the printer table will have vacuum applied when the table vacuum pump is turned on. To close a zone turn the control handle a quarter turn clockwise.

Vacuum Table Foot Pedal

The vacuum foot pedal toggles the table vacuum on or off. It helps the operator to secure the media on the vacuum table since it allows hands-free operation. The vacuum must be turned on prior to starting a print, and the vacuum cannot be turned off until a print is completed.

Vacuum Bleed Valve & Gauge

The bleed valve handle is located to the left of the vacuum control handles. This bleed valve can be adjusted to control the amount of vacuum suction on the media. Less suction reduces artifacts caused by the suction when imaging on flexible media. If you see dimples on the media that are the same size and location as the vacuum table punched holes, introduce bleed until the dimples disappear from the media. The bleed valve is off when its handle is in the horizontal position. To activate the bleed valve, turn the handle to the vertical position. The closer the handle is to the vertical position, the more vacuum pressure is reduced. The gauge on the side of the table above the bleed valve handle provides a visual representation of the actual vacuum pressure.

How to Maintain the Vacuum Overlay Sheet

If an overlay sheet is damaged, replace it. The overlay is an optional commercial item and can be ordered from your local sales representative. You may want to purchase multiple overlays if you need multiple common material sizes or a regular, repeating job that is non-square or unusually sized.

If ink build-up occurs on the overlay sheet, remove the ink. If it is not removed, the print gap could be affected and this may affect the vacuum table's ability to secure the media properly. To remove ink we recommend that you use a paint scraper containing a straight edge razor blade (these can be found at a local hardware store). Refer to the Maintenance section for more detailed instructions.

How to Create Custom Vacuum Zones

Introduction

A fabricated aluminum overlay sheet placed on the surface of the printer table is used to create a vacuum field that is divided into zones. When the printer is installed, a single zone equal to the maximum media size is available. Vacuum zones can be configured in the field to meet specific customer requirements for media sizes. This section describes the procedure to re-configure the vacuum overlay sheet to use custom zones. These recommended zones shown below are either in Metric or Imperial dimensions according to operator preference.

The vacuum control handles are used with the custom vacuum zones. When you create custom zones the three control valves control which zones of the printer table will have vacuum applied when the table vacuum pump is turned on. The left handle controls the Left zone, the middle controls the Top zone and the right controls the Right zone. The vacuum zones are open when the handles are vertical. To close a zone, turn the control handle a quarter turn clockwise.

Purpose

The vacuum system holds the media in place. The three suggested custom zones described in this section and illustrated below, are arranged to accommodate common media dimensions. If you create custom zones, they can be turned off or on according to where media is placed. If you have additional aluminum overlays you can quickly change the configuration of the vacuum zones by placing another overlay on the table.

When to do

If the suggested custom zones on your printer do not match with media sizes that you use frequently, it is possible to change the layout of the zones to suit your particular purpose. This helps to minimize the use of tape and placement of media that will not be printed on when the media size does not match exactly with the zone size.

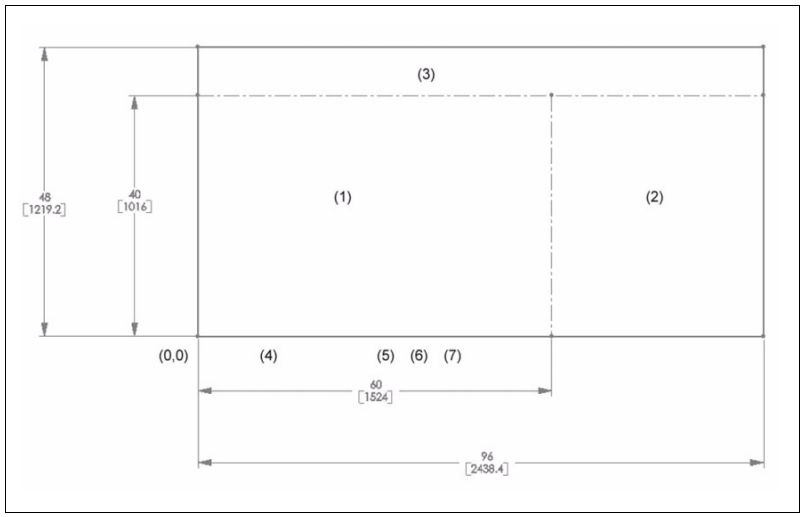
Required tool

Foam tape (part # 3010106701) - use only to create custom zones. Do not use it on the perimeter of the printer table: for the perimeter, use part # 3010106699. Note that these tapes are not available for direct sales to customers. Please see your local service representative to purchase tape.

Note: *Make sure you clean the area with isopropyl alcohol before you apply foam tape to create a new zone.*

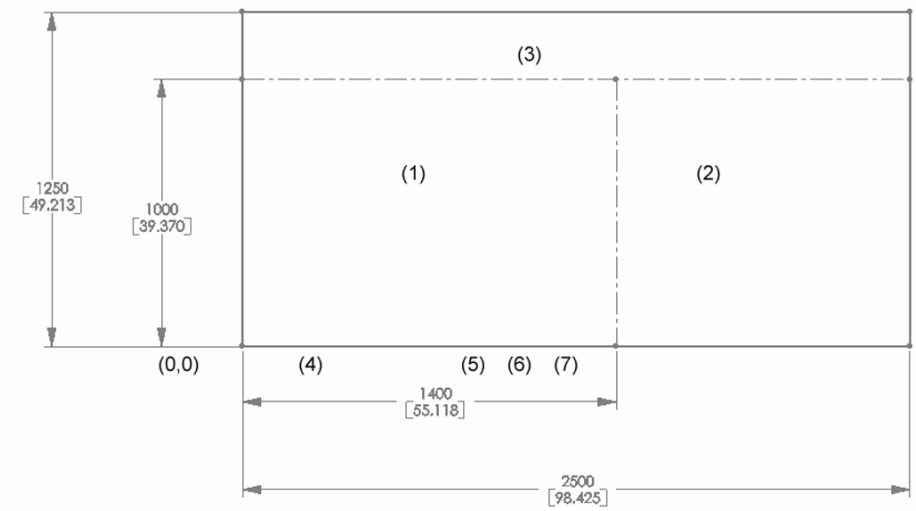
Illustration

(0,0) Print Origin	(1) Left Vacuum Zone	(2) Right Vacuum Zone	(3) Top Vacuum Zone



(4) Vacuum Bleed Valve	(5) Left Zone Control	(6) Top Zone Control	(7) Right Zone Control

[52] Imperial Vacuum Zones



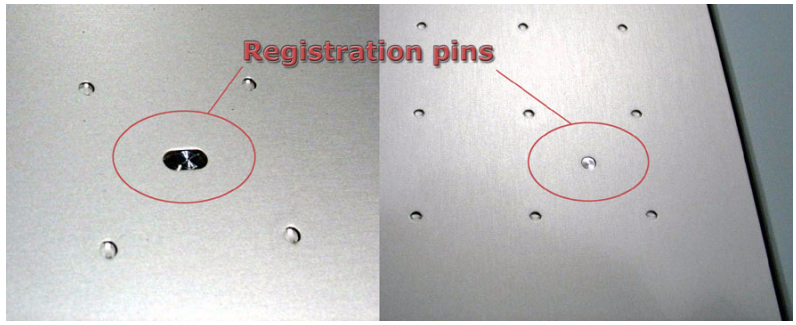
[53] Metric Vacuum Zones

How to Set Up Custom Zones

Attention: When you remove the aluminum overlay to create custom zones, be careful that you don't bend or warp it. Always have a second person to assist you when you handle the overlay. Wear clean gloves to avoid the deposit of oil and dirt on the overlay surface.

The aluminum overlay sheet lays on the printer table surface and is positioned using two registration pins that are bonded to the table. The circular hole and the oval slot in the overlay sheet fit over the registration pins and hold the overlay from moving on the table surface. This section explains how to handle the overlay when you remove it from the table to create custom vacuum zones.

1. With the gantry in its home position, carefully lift the overlay up enough to release it from the two registration pins (the pins are located on the Control side of the table near the corners of the overlay: the side with the Print button and vacuum gauge).



[54] Registration Pins

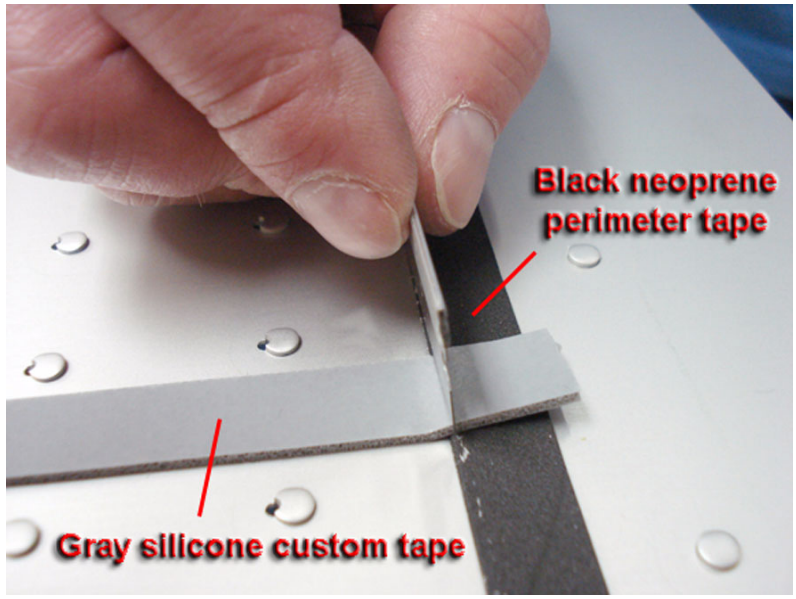
Attention: Be careful that you don't hit the registration pins when you remove or replace the overlay. If these pins are dislodged, there is a replacement kit available or you can re-glue them with epoxy.

2. With one person at each end, carefully raise the overlay to the upright position on the Control side edge of the table.

Note: *Make sure that you support the middle parts of the overlay so that you don't bend or warp it, as shown in the photo. If it does warp you may have to turn it over and leave it to settle for a while until it is completely flat.*

[55] How to Handle the Overlay

3. With one hand on the top and the other on the bottom, carefully flip the overlay over and lay it down flat on the table (or another clean, flat surface).
4. Remove any old foam tape that is no longer required in the new configuration.
5. Clean the area of the overlay sheet where the new foam tape is to be applied with isopropyl alcohol.
6. Measure and add tape (part # 3010106701: gray silicone foam tape) in the desired locations to create zones. When you create a zone we recommend that active vacuum holes are a minimum of 15 mm from the outside edges of the media. This optimizes the sealing effect between the media and the table.



[56] Join the tape with no gaps

Note: *Make sure there are no gaps at any of the places where tapes join at a right angle. Also make sure the gray custom tape does not overlap the black perimeter tape.*

7. Carefully lift the overlay back to its original position and rest the edge on the Control side of the table in the vertical orientation.

Note: *Ensure that the alignment holes in the overlay are on the same side as the two alignment pins on the flatbed.*

8. Lower the upper end of the overlay slowly as you slide your hand inward to support the center to avoid bending until it is completely level with the flatbed.
9. Line up the two holes in the overlay with the two registration pins and square the overlay to the flatbed.
10. Completely cover all zones, close the bleed valve, turn on the vacuum and verify the closed system vacuum level is > 20 inches of Hg. Also verify that the time it takes for the vacuum to establish is less than 4 seconds.

Result

The printer table is now ready for use with custom vacuum zones.

How to Manage Media

How to Handle Media

Introduction

Océ Display Graphics Systems has conducted extensive testing of many media. Since the Arizona 200/250 GT printer is capable of imaging on a wide range of material, we encourage you to explore various media so that you can establish your own criteria for achieving high quality images in your work environment.

Use ICC profiles to control ink density and to help achieve consistent color. If an ICC profile is not available for a particular media and it is not possible or convenient to create one specifically for that media, select an ICC profile for another media that is similar in composition and color and the results will very likely be acceptable. Profiles are much less media-dependant for UV ink printers like the Arizona 200/250 GT than for solvent-based printers. For access to Onyx ProductionHouse profiles, please consult our web site at: http://www.dgs.oce.com/PrinterSupport/

Definition

The term media covers a wide range of possible materials for the Arizona 200/250 GT printer. Essentially, any material that is less than 45mm (1.9 inches) thick, and less than the maximum size of 1.25m wide x 2.5m long (49.2 in x 98.4 in), can be considered viable media. Some materials will hold the ink better than others, so we encourage you to experiment with media to determine what works best for your purpose.

Attention: Do not print on mirrors or any other highly reflective media as UV light is reflected off such media. This results in curing the ink in the heads and thus damaging them.

How to Handle, Store, and Clean Media

See material-specific documentation for recommended handling and storage requirements. General material storage and handling suggestions follow:

- Store media in a dry environment avoiding high temperature, high humidity, or direct sunlight. The size of the material can change according to the temperature and/or humidity changes of the working environment. Ideally, store media in the same environmental conditions as it will be used.

- Store media flat to reduce tendency to bow. Do not use creased, damaged, torn, curled, or warped material.
- Do not leave material loaded in the printer for an extended period of time. The material may curl resulting in misalignment, jams, or decreased printing quality.
- Some material has a printable side and a non-printable side. If you print on a non-printable side, adhesion and color may be affected.
- Handle media with lint-free gloves. Oil deposits from fingers will degrade print quality. Do not touch the printable side of material.
- Media must be free of lint, dust, oil or other debris. Use techniques and solutions that are appropriate to the manufacturer's recommendations.
- Use a tack cloth to clean media as it will reduce static buildup. Press lightly when you use a tack cloth to prevent residue deposit on the media.

Note: *Dirty media can affect image quality and reliability of printer output. If you wipe the media with a tack cloth before printing, it will reduce ink buildup on the carriage underside. The tack cloth removes static and also removes particles that tend to attract stray ink drops that result in ink buildup. Tack cloths are used by auto-body shops to clean cars before painting. Océ does not provide additional tack cloths beyond what is in the Accessory kit. If you did not receive a cloth or if you wish to purchase additional tack cloths, they are available at local hardware or auto-oriented stores.*

Carriage Collision Recovery

If something on the table is higher than the media (or if the media is thicker than what is actually set in the print job settings), a carriage collision may occur. If a collision occurs, the carriage will stop and display a message on the User Interface panel. After the operator clears the offending media from the table and before the next print is started, printhead maintenance must be performed Printhead Maintenance.

Media Adhesion

Some media have better adhesion quality than others. Factors such as the amount of ink used and the amount of curing energy from the UV lamps can affect adhesion. For more information on media adhesion, see Application Bulletin 6 on the customer support web site.

Media-Related Application Bulletins

For additional information on various aspects of handling and managing media refer to the customer support web site. See Appendix A of this document or visit the web page to see a list of available bulletins: http://www.dgs.oce.com/PrinterSupport/

Thermal Expansion of Media

When imaging on media that will expand when subjected to heat (e.g., styrene or Plexiglas, etc.), don't wedge the media by butting other material against it as this may cause the media to buckle. Also if multiple pieces of the media are used, allow enough space between the pieces to allow for thermal expansion. Placing tape on the table prior to laying down the media will prevent ink from being imaged onto the table. Finally, if you overprint on media that expands when heat is applied, we recommend that you group the desired image with a preceding image so the printer is a consistent temperature when starting to print the desired image.

Thermal Deformation of Media

Some heat-sensitive media may deform when subjected to high heat. If this occurs you can reduce the lamp power from the default setting of 7 to find a compromise level that allows the ink to cure but does not warp the media. You can also try to print uni-directional using only the trailing lamp (to do this set the power of the leading lamp to 0).

Media Registration

Media can be registered on the table using the **table rulers**. These rulers are printed on the table and provide a horizontal and vertical rule that originate from the 0,0 print origin point on the table. The rulers can also help to provide offset distances if you need to start a print away from the origin point.

Alternately, the **media registration cards** can be used to register media if it must be placed consistently away from the table rulers. These PVC adhesive-backed card can be placed anywhere on the table to set new coordinates for print origin to enable consistent registration of media in that location. Make sure that you set the offsets to match the location of the cards. Note: these cards can be stacked, but if more than two of them are stacked, the carriage will collide with them if you print at zero media height. Always check the height if you use multiple stacked cards so that they match the height of your media and the set the carriage height accordingly.

Underlay Board to Reduce Artifacts

Introduction

When printing on thin, flexible, or porous media, the holes in the vacuum table of the printer can cause print artifacts (sometimes referred to as “dimpling”). If you encounter this problem when printing, use the provided underlay board between the media and the table to reduce the problem.

Purpose

To reduces print artifacts (dimples) on thin or flexible media.

When to do

If you use a thin media that shows dimples that correspond to the holes in the vacuum table, then you may need to use the underlay board beneath your media to avoid this problem.

Before you begin

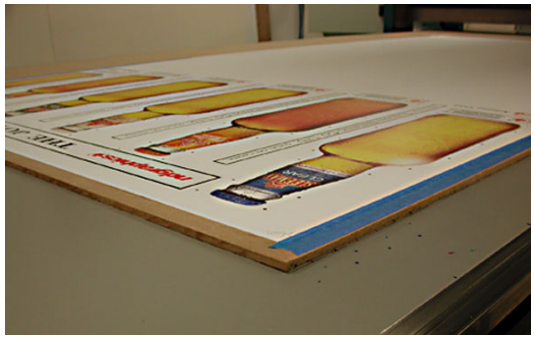
A Medium Density Fiber (MDF) underlay board ships with the printer. If this board is damaged, replacements are not available from Océ Display Graphics Systems. You must source the underlay locally (these boards are used with routers that require vacuum tables, which may help you locate a local supplier). If you can't source an underlay board locally, here is a possible source for them.

North American contact information (a suggested source - other sources of similar products may be available. For other areas, check your local hardware and router supply stores):
THERMWOOD Corp.
904 Buffaloville Road
PO Box 436 DALE, IN 47523
USA Contact: Melanie Tullis
Tel.1-800-221-3865 Ext. 266
email: Melanie.Tullis@thermwood.com

You can get more information from their website:
http://www.woodworkerswholesale.com/

Note: *If you use the underlay board, make sure that you cover over any areas of the board not covered by the media or the vacuum pressure will be reduced. Also make sure that there are no high spots that could cause a carriage collision.*

Illustration



[57] Underlay Board with Media

How to Prepare the Underlay Board

1. Seal the edges of the underlay board with tape or use a liquid sealer to prevent vacuum leaks through the edges of the board.
2. Cover any area of the board not covered by the media to avoid vacuum loss.

Tips On How to Use the Underlay Board:

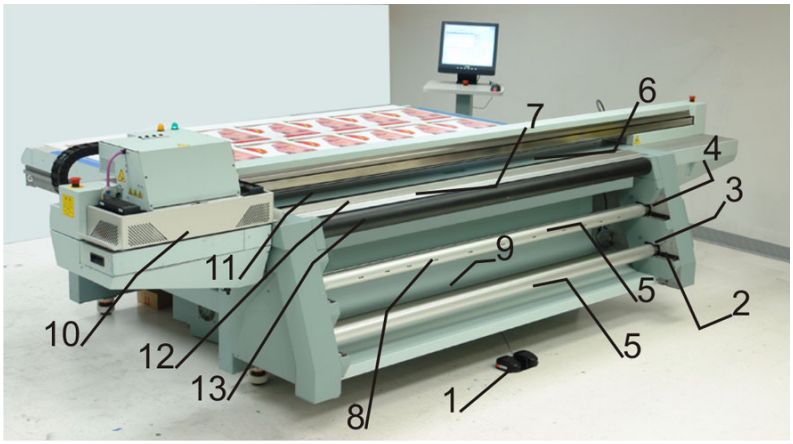
1. Use scrap pieces of media to cover any exposed area of the underlay board that the carriage will travel over. This prevents the board from lifting off the table and colliding with the carriage.
2. It may be necessary to bleed the vacuum by opening, or partially opening an additional vacuum zone to reduce dimple artifacts.
3. Confirm that the underlay thickness is added to the media thickness and set correctly.

Chapter 6
How to Operate the Roll Media Option

Roll Media Option Hardware

Introduction

The base configuration for the Arizona 200/250 GT is a flatbed printer where the media is static during printing. A Roll Media Option (RMO) is available for the printer that allows the use of media that is supplied on a roll. This optional unit is manufactured, crated, stocked and shipped as an independent assembly. Once the Roll Media Option is installed, it shares the print gantry with the printer.



[58] Roll Media Components

Component Locations

[31] Roll Media Hardware

Component	Function
1) Dual Foot Pedal Switch	7) Media Cut Guide
2) Media Drive Couplers	8) Media Core Locks
3) Supply Shaft Motor	9) Media Tension Bar
4) Take-up Shaft Motor	10) Media Edge Detector
5) Media Shafts	11) Capstan
6) Media Access Door	12) Platen
	13) Gimbal

Hardware Function table

The Roll Media Option consists of a supply media drive, media tension bar, capstan roller, vacuum platen, media gimbal, media edge detection sensor, and a take-up media drive. This system accurately advances the roll of media during printing. The roll media is positioned with a high resolution media encoder as it moves past the carriage printheads. This ensures accurate and high quality prints on various core media.

[32] Roll Media Hardware (1 – 2)

Component	Function
1) Dual Foot Pedal Switch	The dual foot pedal switch is located on the floor under the RMO unit. It is used to control media feed in both forward and reverse directions. Function varies depending on whether media is loaded or unloaded.
2) Media Drive Couplers	The couplers keep the media shafts in place and engaged to the drive motor. In the open (horizontal) position they allow the media shafts to be removed.
3) Supply Shaft Motor	Drives the supply media shaft.
4) Take-up Shaft Motor	Drives the take-up media shaft.
5) Media Shafts	The shafts hold the roll media core in place. This can be an empty core for take-up or a core with a roll of media for supply. The media shaft has a large track roller at one end, and a drive coupler at the other. The media shaft is designed to slide inside a roll of media with a 3" cardboard core. It uses spring-loaded core locks to lock the roll of media to the shaft. The locks are engaged or released with a 5mm hex key. The media shaft supports the media roll, provides aligned positioning of the media roll in the printer, and drives the transport of material on the media roll.
6) Media Access Door	This door opens to provide access to the roll of media for media loading. It also eliminates a possible shear hazard to the operator between the carriage and the roll unit endplates. The door has a safety interlock switch. If the door is open no carriage or gantry motion can be initiated at the printer.
7) Media Cut Guide	A gutter (slot) between two pieces of sheet metal that serves to guide a blade to cut the media.

[32] Roll Media Hardware (2 – 2)

Component	Function
8) Media Core Locks	These locks hold the media core in place on the media shafts. Use the supplied 5mm hex key to lock and unlock the media core at the right end of the media shaft.
9) Media Tension Bar	Provides constant tension for loaded media (located behind the lower media shaft). The bar provides tension to ensure steady movement of the media.
10) Media Edge Detector	An optical sensor on the bottom of the carriage that detects the edge of the media. Detection of the media edge occurs over the media guide between the capstan and the platen. The media edge detection sensor provides the following functions: · Determines the actual width and location of the media after it has been loaded. · Tracks media drift during printing.
11) Capstan	The capstan is a large roller that is coated in precision ground rubber. A high resolution encoder is mounted at one end. A brake is installed at the opposite end to stop media drift while imaging. **Note:** *The capstan must always be clean and smooth. Always clean any kind of debris that might collect on it, especially UV inks (See Maintenance section for cleaning instructions).*
12) Platen	The top surface of the platen is populated with vacuum holes. The underside is relatively closed in order to maintain a negative pressure inside the platen. A series of fans on the bottom of the platen create the negative pressure that helps to hold the media in place while an image is printed.
13) Gimbal	Maintains alignment of the media on the take-up shaft. It is spring-loaded to prevent drift or skewing of the media. The gimbal is located between the platen and the take-up shaft.

Roll Media Option Specifications

Introduction

The Roll Media Option available for the Arizona 200/250 GT printer allows the use of various flexible media that are supplied on a roll. Specifications such as print speed, print area available and the amount of waste associated with the use of roll media are indicated in this section.

Note: *The Arizona 200/250 GT and the Roll Media Option must be operated in accordance with the environmental conditions specified in the Arizona 200/250 GT Site Preparation Guide and all safety requirements noted in this document.*

Media Size Supported

Width (Max.): 2.2m (86.6")
Width (Min.): 0.9mm (36")
Roll Diameter (Max.): 240mm (9.45”)
Core Inner Diameter: 76.2mm (3”)

RMO Print Speeds

For printers with software/firmware greater than version 2.6, RMO print speeds are approximately as shown in this table.

RMO Print Mode	Arizona 250 GT	Arizona 200 GT
	m^2/hr. / f^2/hr.	m^2/hr. / f^2/hr.
Production	13.1 / 141	7.3 / 78
Quality	9.4 / 101	5.1 / 55
Quality Matte	6.6 / 71	N/A
Quality Density	5.0 / 54	N/A
Fine Art	7.3 / 78	3.9 / 42

Print Size Supported

2.190m (86.2”)

This allows for a minimum 5mm (0.2”) border. This is necessary to ensure the platen is not contaminated with ink due to possible media tracking errors. Cured and uncured ink on the platen will have a serious effect on printer performance. Any spilled ink must be removed immediately (See RMO Maintenance section). If an image exceeds the 5mm border requirement, printing will not be allowed to proceed.

Maximum Media Thickness

This value is not officially specified. It is theoretically possible for the RMO system to accommodate media up to 3mm (0.11 inches). However, most media at or near that thickness will have problems in the transport mechanism of the RMO unit.

Maximum Supported Weight

Media Width (mm)	Max. Weight kg (lbs)
900 ≤x < 1220	28 (62)
1220 ≤x < 1480	40 (88)
1480 ≤x < 1780	45 (100)
1780 ≤x ≤2200	50 (110)

Leader & End of Roll Waste

Leader Waste: 560mm (22 inches)

Leader waste is the amount of media that cannot be printed between the roll media platen and the take-up media roll. This waste is produced every time media is loaded, taped to the take-up core and initialized in preparation for the first print. Trailer waste is the media that cannot be printed at the end of the supply media roll. This will vary slightly depending on the attachment method that was used to secure the media to the media core.

End of Roll Waste (minimum possible): 920mm (36 inches)

End of roll waste is the media that cannot be printed at the end of the supply media roll. This will vary slightly depending on the attachment method that was used to secure the media to the media core.

Roll Media Theory of Operations

Introduction

The Roll Media Option system operating specification is described in terms of the following states:

- Media Load
- Media Unload
- Media Initialization
- Media Printing
- Media Manual Feed
- Media Idle
- Media End of Roll

For each user state, software control of the roll of media and consequent media movement is achieved using one of the following two control modes.

- Non-Initialized Control mode
- Initialized Control mode

Non-Initialized Control Mode

The default control mode for the Roll Media Option motion system is the non-initialized control mode. This mode is active:

- When the printer first powers up
- During the Media Load function
- During the Media Unload function
- After a Media End of Roll has been detected

Initialized Control Mode

In order for printing to occur, the printer must be in initialized control mode. Initialized control mode can only be achieved after a successful media initialization. This mode is used during the following states:

- Media Advance
- Media Idle
- Media End of roll detected
- Media Manual Feed

Introduction to Media Loading

Loading and threading roll media is a manual process. A media shaft is required for both the supply and take-up media rolls. The function of the shaft is to provide additional core support and a non-slip drive condition between the drive motors and the media rolls. The media shafts must be inserted in to the supply media roll and take-up media core before they can be loaded. The media shafts are inserted manually and are automatically locked in place by a spring-loaded media shaft drive couplers. In order to thread media from the supply roll to the take-up roll the operator uses a foot pedal to control the take-up media drive. The foot pedals allow the supply media to be driven forward or reverse in non-initialized control mode. While media is being driven forward the operator can manually guide the media under the media tension bar then up and over the platen. The forward and reverse drive directions can be used to help position the media to facilitate taping to the take-up media core.

Refer to media threading label on the Roll Media Option for details on how to thread the media when loading. The media roll can be threaded to print either print side out or print side in.

Note: *For optimum printing results it is recommended the media be aligned such that no more than a 1mm offset exists between the supply and take-up media rolls.*

The Roll Media Option design does not have a media drive pinch. Therefore, all printing requires the media to be taped to the take-up media core. Once the media has been taped to the take-up core the operator selects the icon Initialize.

Media Initialization

A media supply roll must be installed, and media threaded and taped to the take-up core before you can initialize the media. The media initialization process prepares the printer for printing after the operator selects the Initialize icon in the Roll Manger. When the initialization is complete, the system will switch to the initialized control mode and is ready for printing.

Introduction to Media Unloading

Select the Unload Media icon from the printer software to change the control mode from initialized to non-initialized. . At this point the supply shaft pays out a small amount of media until the media tension bar is in the zero position (stationary-sitting on the media ramp). This is required so the media tension bar does not fall down if the media cannot be held stationary by the vacuum platen during the cutting process. The Unload Media command changes the functionality of the foot pedal switches to the following:

During this mode the system monitors the position of the media tension bar and the supply roll. If upward media tension bar motion or forward supply roll motion is

detected, the move is interrupted, motion stopped, and the user is notified to cut the media or otherwise remedy the situation.

The Cancel command returns the media tension bar to its original position (this is assuming the media has not been cut) to be ready for printing. The Load Media command assumes the media has been cut and therefore goes through the full Load media function.

Media Manual Feed

This enables the operator to advance or rewind loaded media using the foot-pedal controls in the initialized control mode. This allows the operator to rewind media in order to view previously printed images on the printer and to advance back to its original media position. Press a foot pedal switch to move the media at the lowest possible speed. Release the switch to decelerate the media to an idle state.

Media End of Roll

The control system automatically detects an end of input roll condition, independent of media to core attachment method.

Foot Pedal Switch Functions

Introduction

The foot pedal switches are used to control the forward and reverse movement of media shafts.

Summary of Dual Foot Pedal Switch Functions

The following table indicates the foot pedal functions for various RMO states. It may help to think in terms of how you drive a car: left foot on the brake holds back, while right foot on the accelerator moves forward.

[35] Actions for foot pedals in various states

	Media Reverse		**Media Forward**	
RMO State	**Left Hold**	**Left Tap**	**Right Hold**	**Right Tap**
Load Media	Rewinds media onto supply shaft	Unlocks media supply shaft	Advance media from supply shaft	Unlocks take-up shaft
Initialized	Rewinds media	n/a	Advances media	n/a
Unload (before media cut)	**Important:** Don't touch the pedal switches Media is positioned for cut when you click on the Unload icon Cut the media, then proceed with unload			
Unload (after media cut)	Unwinds media from the take-up roll	Rewinds media and unlocks the supply shaft	Winds media back onto the take-up shaft	Winds media and unlocks the take-up shaft
Media End of Roll	Rotates the supply shaft in reverse	Rotates the supply shaft to unlocked position for removal	Rotates the take-up shaft to wind media onto the shaft	Rotates both supply and take-up shafts to unlocked position for removal

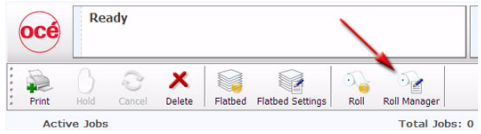
Roll Media Manager

Introduction

The Roll Media Manager is the part of the printer interface that allows you to prepare to print on roll media. With it you can load and unload media, change media type and parameters, and initialize the printer to prepare it to print on roll media. This section introduces the icons in the Roll Media Manager that are necessary to load and initialize a roll media print job. How to set the Media parameters and print the job is explained in the section "How to Print on Roll Media".

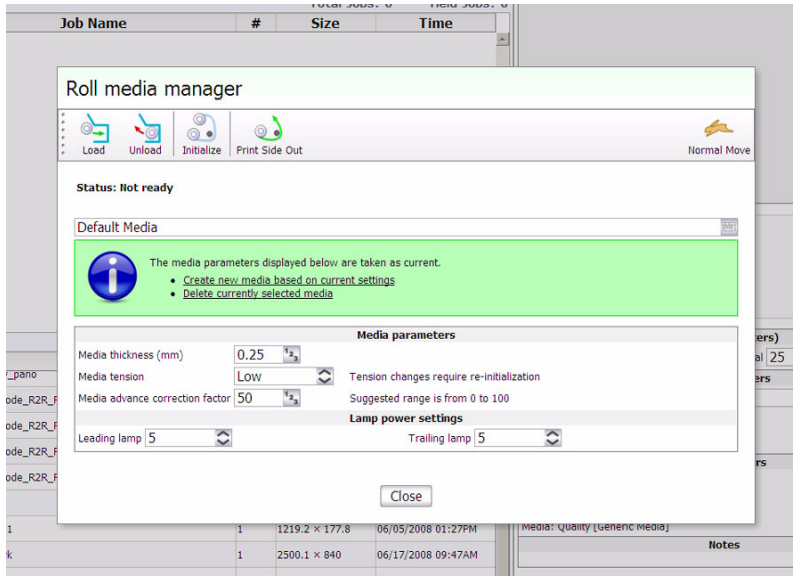
How to Access the Roll Media Manager

Click on the Roll Manager icon in the command toolbar of the Print Job module.



[59] Roll Manager icon

The Roll media manager is displayed in the center of the screen.



[60] Roll Media Manager

Component - function table

[36] Roll Media Manager Icons

Icon	Function
Load	Allows the operator to load new media. Set the foot pedal switches to the Load state.
Unload	Prepares the RMO to allow the operator to cut the existing media, remove it, and replace it with a new roll.
Initialize	Sets up tension on the loaded media and prepares the RMO to print on that media.
Print Side	Operator can select either Print Side In or Print Side Out. Print Side In allows you to print on the back side of the media. The default setting is Print Side Out.
Normal Move / Slow Move	Normal Move is the default state. When you click on this icon in the top right corner, it changes to Slow Move. Use Slow Move when you want to advance or rewind media and stop it at a more precise position. It causes the dual foot pedal switches to move the media more slowly.

How to Use the Roll Media Manager

The procedure to use these icons to load and unload media is explained in the next two sections. How to verify or change media parameters and to actually print a roll media job is explained in the section "How to Print on Roll Media".

How to Load Media

Introduction

This section explains all of the actions associated with loading a new roll of media when the Roll Media Option is installed. It also specifies in detail how to perform particular actions.

Load Media

The following actions are associated with loading media:

- A) Load Supply Media Roll On Media Shaft
- B) Load Take-up Empty Core On Media Shaft
- C) Thread media
- D) Initialize Roll Media To Prepare For Printing
- E) Select Existing Or Create New Media Parameters

When to do

This section explains how to load new media when none is currently loaded. If media is already loaded, first read the section How to Cut and Unload Media.

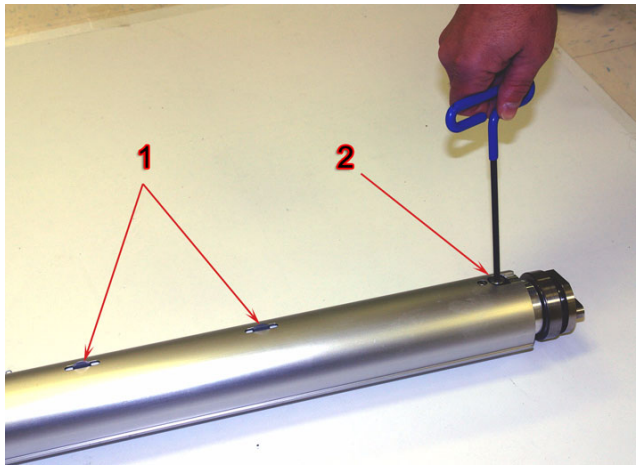
Required tool

5mm hex key

Note: *Check that the media is evenly rolled on the core with no bumps or extrusions. Also check that it is aligned to avoid telescoping (lateral displacement) as it winds onto the take-up shaft.*

A: Load Supply Media Roll On a Media Shaft

1. Place an empty media shaft on a suitable flat work area, positioned as shown, so that the hex key is inserted on the right side of the shaft to lock and unlock the core locks.



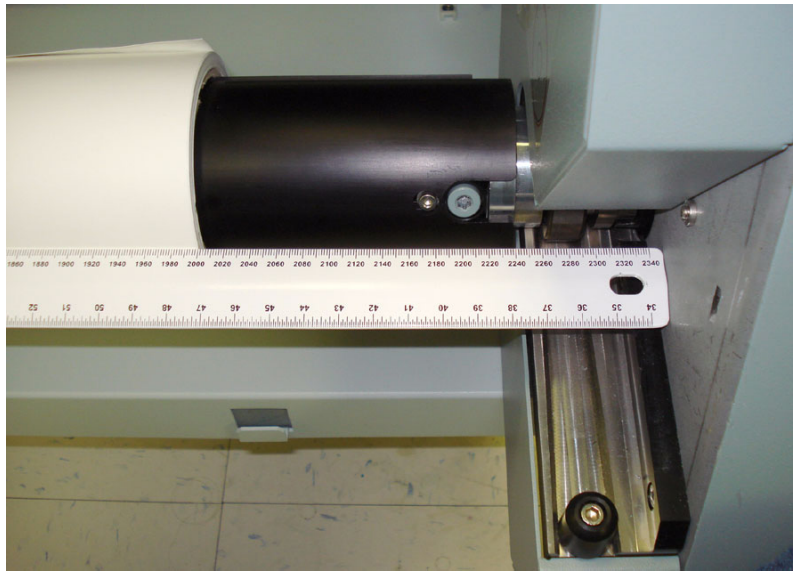
[61] Unlock the Media Shaft Core Locks

2. To unlock the media shaft core locks (1) turn counter-clockwise with the supplied 5mm hex key (2).
3. Slide a new roll of media onto the supply shaft.

Note: *Determine first whether you need the roll to be print side out or in. "Print side out" means that the media unrolls from the bottom of the shaft. "Print side in", means that the media unrolls from the top of the shaft (see the diagram in section C "Thread the Media").*

4. Roughly center the roll on the shaft, and then insert the shaft into the Supply (bottom) position on the printer.

5. Accurately center the media using the supplied ruler. Media should be centered within 1mm on the ruler (or 5mm if you use the edge detector sensor.



[62] Ruler to Center Media

Note: *The supplied ruler has both metric (millimeters) and imperial (inches) scales. When a media roll is centered on the shaft, and the ruler is placed as shown in the photo, the value on the ruler scale will match the width of the roll. For example, in the photo a 2 meter (or 2000mm) roll is centered on the media shaft.*

6. Lock the supply media shaft core locks with the 5mm hex key.

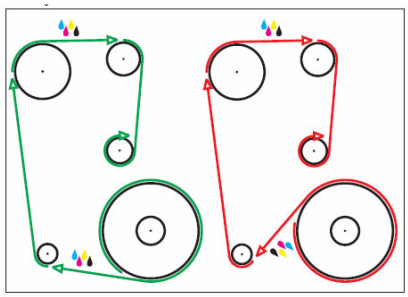
B: Load an Empty Core and Install in the Take-up Position

1. Place the empty take-up media shaft on a suitable work surface and unlock the media shaft locks with the 5mm hex key.
2. Slide an empty media core that is at least as long as the supply media width onto the take-up shaft.
3. Roughly center the core and then insert the shaft into the Take-up (top) position on the RMO unit.
4. Center the core using the supplied ruler so that the take-up media can be aligned to the supply media roll when it is later threaded.
5. Lock the take-up media shaft core locks with a 5 mm hex key.

C: Thread the Media

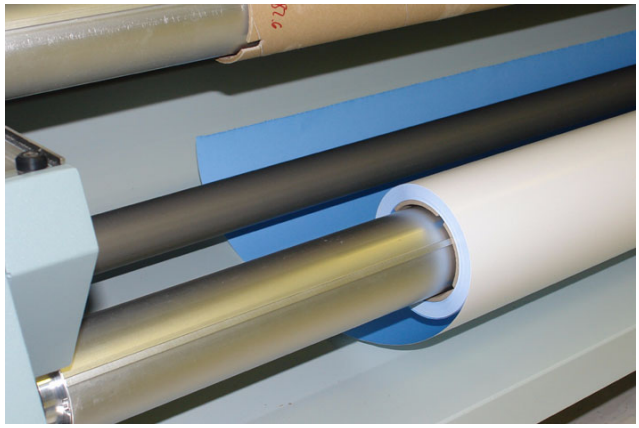
1. Select the Load icon from the Roll Media Manager.
2. If you are going to print with "Print Side In", click the icon in the Roll Media manager ("Print Side Out" is the default so you do not need to select it unless you have recently used Print Side In). Note that the icon toggles from one choice to the other when you click it.

Note: *For Print Side Out, the media unrolls from the bottom the supply shaft as shown in green on the left below.*
For Print Side In, the media unrolls from the top of the supply shaft as shown in red on the right below. This allows you to print on the "back" side of the media.



[63] Media Path Choices

3. Wait for the gantry to move part way across the table.
4. Continually press on the right foot pedal, as required, to gradually advance the media for the next two steps.
5. Thread the media under the media tension bar (Note that the media is threaded for Print Side Out in the photo below).



[64] Thread Media Under Tension Bar (Print side out)

6. Open the media access door at the top of the Roll Media unit, then reach down through the open door to grasp the media and feed it up and over the take-up roll.

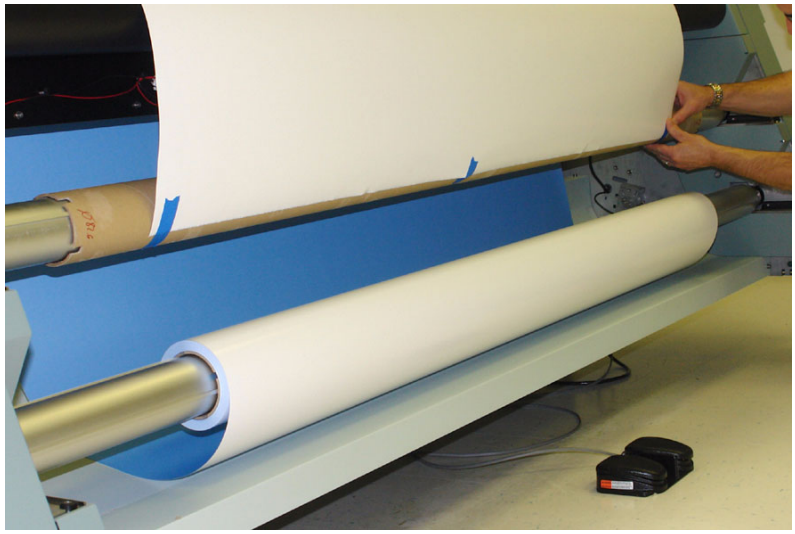
[65] Feed Media Through Access Door

7. Check alignment of the media by feeding it down to the supply roll and make sure that the edge lines up with the edge of the supply roll.

[66] Line Up Edge of Media to the Supply Roll

8. Rewind the media by continually pressing down the left foot pedal until it is positioned where it can be taped to the take-up core.

9. Tape the media onto the core. The media should have a clean straight edge prior to taping. First tape the center of the media to the core, and then tape both ends of the media.



[67] Tape Media to the Take-up Roll Core

Note: *Ensure that the media is flat along the core. If the media is not flat it can create an uneven roll that affects the motion of the media past the printheads and therefore the quality of the image.*

10. Use the supplied ruler to check that the take-up roll is centered within 1mm (or 5mm if you use the edge detection sensor).

D: Initialize Roll Media To Prepare For Printing

Select the "Initialize" icon from the Roll Media Manager to properly tension the media and to prepare for printing.

E: Select Existing Or Create New Media Parameters

From the Roll Media Manager select the media to be printed on or create a new set of media parameters for the media loaded. Refer to the Roll Media Manager section for details.

Result

You are now ready to print. Refer to the How to Print on Roll Media section for instructions

How to Unload and Cut Media

Introduction

This section explains all of the actions associated with how to cut and unload media when there is still some media left on the supply roll.

Note: *If the media supply roll is empty, simply remove the empty supply shaft and the take-up shaft. Then replace the roll of media from the take-up position with a new roll and put the shaft into the supply position. Then you can use the empty core from the supply position as the take-up shaft.*

Unload Media Summary

The following actions are associated with unloading media:

- A) Move the Media to Cut Position
- B) Cut the Media
- C) Remove Media from Take-up Shaft in Printer or Remove Take-up Shaft
- D) Remove Supply Shaft From Printer
- E) Remove Media Roll Or Empty Core From Media Shaft

When to do

This procedures details the actions required to unload media when there is still some media left on the supply shaft. When the supply shaft is empty there is no need to cut or rewind the media.

Required tool

5mm hex key

A: Move the Media to Cut Position

Use the right foot pedal to advance the media so that the area where you want to perform the cut is positioned over the media cut guide (if you advance too far you can rewind it with the left foot pedal).

B: Cut the Media

1. Click on the Roll Manager icon to bring up the Roll Media Manager.
2. Select the Unload icon in the Roll Media Manager to release the tension on the media so it can be cut.
3. Cut the media with a blade along the cut guide.
4. Click on OK to proceed.

C: Remove Media from the Take-up Shaft in Printer or Remove Take-up Shaft

1. If there are only a few images on the take-up roll and you want to remove them without removing the take-up roll from the printer you can press the left pedal to rotate the take-up media shaft in the reverse direction. You can then roll up the media by hand as comes off the take-up roll.
2. The other option is remove the take-up roll from the printer and then remove the roll of unused media from the media shaft. To remove the take-up roll, tap the right pedal momentarily to rotate the take-up shaft one revolution to the unlocked position in the forward direction.

D: Remove the Supply Shaft From the Printer

1. If you want to change the supply shaft, momentarily press the left pedal to rotate the supply shaft four complete revolutions. This rewinds excess media back onto the supply roll if is not empty) to the unlocked position.
2. Remove the supply shaft from the printer by pulling it up and out of the drive coupler.

E: Remove Media Roll Or Empty Core From the Media Shaft

1. Place the media shaft on a suitable work surface.
2. Unlock the media shaft core locks using a 5 mm hex key.
3. Slide the media core off the shaft.

Result

Roll Media unit is now ready for you to load new media.

How to Set Up a Roll Media Job in ProductionHouse

Introduction

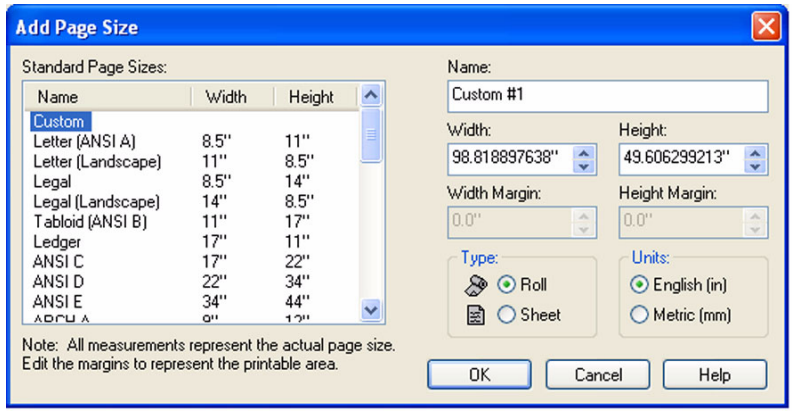
Print jobs can be specified as either a roll job (Roll) or a flatbed (Sheet) job in ProductionHouse. The specification of either type of job can also be changed after the print job is transferred to the printer in the Print Jobs module.

Purpose

The operator can choose the type of desired print job and also put a hold on it so it will not print automatically.

Set up the Roll Job Option in ProductionHouse

When you set the page size for your print job, click on Type: Roll to make it a roll media option job.

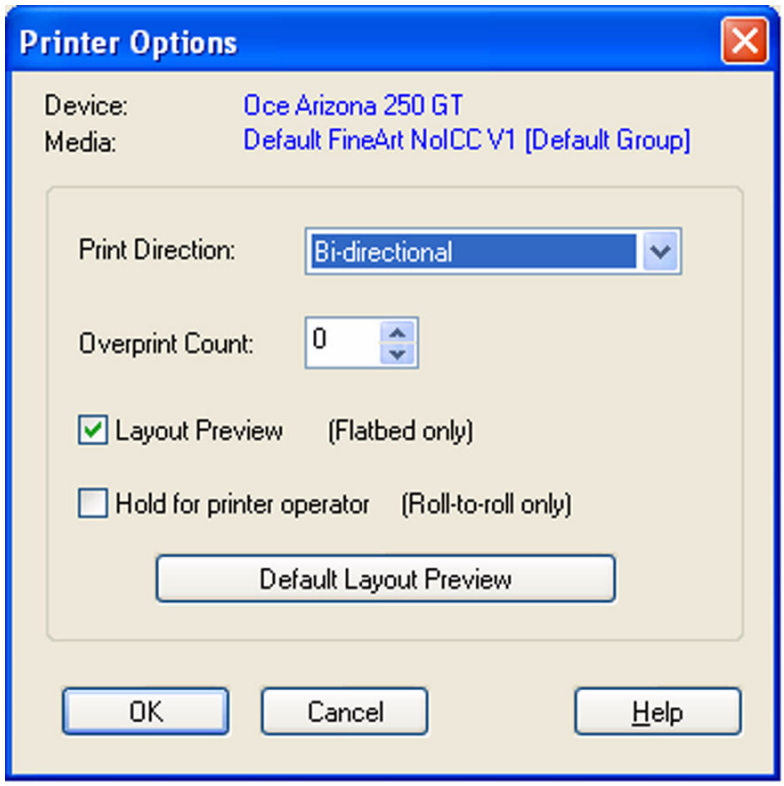


[68] Onyx Page Size - Roll Option

Set a Hold on a Roll Job

To ensure that your roll media print job is held and not automatically printed, click on the box in front of "Hold for printer operator" when you set the print options in ProductionHouse.

Note: *If you don't set a hold in ProductionHouse, it is also possible to disable the Roll media print queue at the printer. To do this click on the Roll icon in the command toolbar of the Print Job module so that it become dim (grayed out). This will stop any roll media jobs from automatically printing.*



[69] Onyx Roll Hold

Note: *The Hold for operator is not selected in this illustration since the default is unchecked. If you want to initiate a hold, click it to select.*

Result

The operator has a lot of flexibility in the control of roll media print jobs and whether they print automatically or not.

How to Print on Roll Media

Introduction

If media is loaded and the Roll Media unit has been initialized, the printer is ready to print an image. Use the Print Job module and the Roll Media Manager to prepare and start the print.

Note: *All Roll media operations that involve media movement are disabled while a Flatbed job prints.*

Media Edge Detection

This feature is available in printer software version 2.6 or greater. When roll media is loaded and the Initialize button is clicked in the Roll Media Manager, a sensor in the carriage will try to detect the edges of the media. If the detection succeeds, then the media center is calculated and appropriate correction is applied to center the image. However, if edge detection fails then the error "Media edge detection failed" appears in the Media manager status bar after "Ready". If detection fails, the media center is considered to be the center of the roll platen.

Note: *Even if detection fails, the job will still print. Therefore do not print the job unless you are sure the media is centered and wide enough to fit the image. Edge detection may fail with transparent media or media that is close in tone to the platen (dark grey). If you see consistent fail messages when you use plain white media, it is possible that your edge detector is not working. In that case, you must place a call to your service representative.*

How to Print on Backlit Media

If your roll media is transparent or opaque and you are going to backlight the image and you want to increase the density, set Quality mode in ProductionHouse. Then click on the Quality parameter in the Print Job menu and select Quality-Density before you initialize the job. This mode increases the density of ink for this image as it prints and therefore improves the appearance of backlit images.

Before you begin

Media must be loaded and initialized as explained in the section "How to Load Roll Media".

Attention: The red Emergency stop buttons do NOT stop the media transport when you print on roll media (they only stop gantry and carriage movement). If you encounter a situation where the roll media runs continuously without operator input, the only recourse is to shut off the printer's AC power switch.

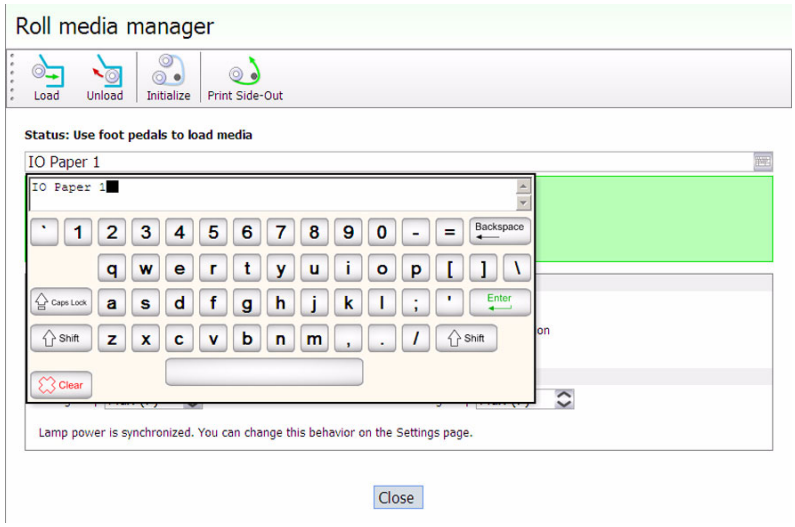
Prepare a Roll Media Print Job

1. Click on the Roll icon in the menu bar of the Job Control module to disable the RMO print queue (this allows you to check media parameters before the job actually prints in case the job was not given a Hold status when it was generated in Onyx ProductionHouse).

[70] Roll Icon

2. In the Print Job Control module, transfer a print job from Onyx ProductionHouse.
3. Click on the Roll Manager icon to enter the Roll Media Manager dialog window.
4. Check that the media parameters displayed match the particular media you are using.
5. You can create a new media or edit an existing one by changing the parameter values and then saving them under a new media name. When you create a new media it takes the current values as default and automatically creates a unique media name based on the existing name. You can change the assigned name by selecting characters from the virtual keyboard.

Note: *Any changed parameter in the dialog window will be applied to the next roll media print job, even if the change was not saved. This allows temporary changes to the parameters without the need to save that media.*



[71] Roll Media Manager Keyboard

Note: *If you have used a media before, it will be listed in the Media Type pull-down menu in alphanumeric order. If the list contains less than 10 media types, a drop down list is displayed. If there are more that 10 media types, they are displayed in a dialog with a scroll bar. If you make any changes to the media name or parameters the advisory pane will change color to indicate that there are unsaved changes and will display relevant commands.*

Note: *There is always at least one media in the list that is called Default Media. It cannot be deleted, but you can change its parameters if you want to use it. If you choose to delete it, the parameters will go back to its original values, but the item will still appear in the list.*

6. Select the Media Tension

Note: *The Media tension option allows you to choose the amount of force placed onto the media shafts to keep it tightly drawn as it moves through the RMO unit. The low tension setting is usually fine; however, if the media shows significant puckering across its entire width, the medium or high tension setting may be required.*

7. Select the Media Advance Correction Factor

Note: *Leave it at 50 unless you see light or dark lines of banding in the printed image (refer to the next section "How to Set the Media Advance Correction Factor for more details).*

8. When the displayed media values are correctly matched to the loaded media, click Close to exit the Media Manager.
9. Click on the Roll icon in the menu bar of the Job Control module to activate the RMO print queue (the icon will change from yellow to green).

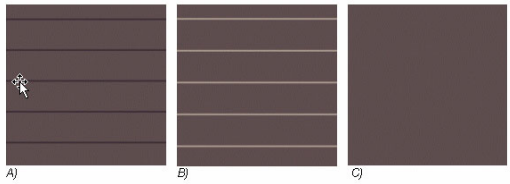
Result

Any print jobs that are in the queue, not on hold, and marked as roll jobs will print. There is no explicit confirmation required to start a roll media print job. Any roll media jobs in the print queue will start to print immediately.

How to Determine Media Advance Correction

Introduction

As roll media passes over the capstan, the stress can cause the thickness to deviate from its ideal, non-stressed state. This deviation can result in incorrect capstan encoder readings, and lead to discrepancies in the amount the media advanced during each print swath. This can cause banding to occur, in the form of either dark lines or white gaps. The figure below illustrates this banding.



[72] Media Advance Banding

Note: *The actual thickness of the white gaps or dark lines in this figure may be thinner than shown here.*

- A) Understep can result in dark lines, where the media has not advanced enough and the placement of a swath overlaps the prior swath.
- B) Overstep can result in white gaps, where the placement of a swath is displaced a significant distance away from the prior swath.
- C) Perfect Step, where media advances correctly.

Purpose

The Media Advance Correction Factor (MACF) is a value that you can associate with media that exhibits this banding to eliminate the effect. This section documents the procedure to arrive at the ideal MACF for a particular media.

When to do

The MACF is only required when this particular banding occurs. If you don't see any banding in your images, there is no need to change the value from its default setting of 50.

Before you begin

If roll media is not correctly loaded, banding that looks like under/over stepping can result. If a media shows significant tension deviation across its width, or if it telescopes significantly (identifiable by the edges of the media on the Take-up roll), it is difficult to accurately find the correct MACF. If the media telescopes, reload it before you start the correction procedure. One tell-tale indicator of telescoping and significantly varying tension is to look at the Media Advance Correction Print near the sides; if under stepping banding occurs on one side, and overstepping on the other, the banding is not the result of an incorrect correction factor, rather it is possibly due to an improper media load.

How You Determine the MACF

In the 'Roll Media Manager' menu you can select the 'Media Advance Correction Factor' (MACF) and enter a value from 0 to 100. The default value is 50. You can enter a lower value to correct for white gaps or raise the value to correct for dark lines.

To arrive at the MACF for a given media, a Special Print is used. The print images a series of colors that are used to identify a range where no white gaps or overlap (dark lines) are evident. Depending on the given media, some of the colors may be more susceptible than others to this banding (this is why more than one color is present on the test print). The test print used for the calibration of the MACF can be found in the Special Prints module. It is called the Media Advance Correction Factor print.

Procedure to Determine the MACF for Upper Limit Value

1. Click the Roll Media icon to bring up the Roll Media Manager.
2. Enter a large value for the media advance correction factor, (say 75) and print the image. Verify that white gaps are present (spaced a swath width apart); if they aren't, enter a larger value and reprint (continue until the white gaps are noticeable).
3. Once gaps are verified, reduce the correction factor value by 10 or 5 and reprint. Continue reducing the value and reprinting the test image until white gaps are no longer visible. At this point fine-tuning can be done if desired, changing the correction factor by values of around 2 or 3 to determine the exact spot banding occurs; this level of accuracy usually isn't necessary. Record this value as the high end of your MACF range.

Procedure to Determine the MACF for Lower Limit Value

1. Enter a low media correction value (say 15), and verify that noticeable understepping occurs, in the form of dark lines spaced a swath width apart.
2. Once understepping swaths have been verified, increase the media correction value by 10 or 5, stopping when you no longer see dark lines (Again, finding the exact value where banding occurs can be performed, though it is usually not necessary). This is the low end of your MACF range.

Note: *With some media, the more dense (darker) colors may still show thin lines when the correction factor is close to being correct (due to edge of swath banding); in this case it may be wise to use the lighter colors to calibrate the correction factor.*

Apply the Optimal MACF to the Current Media

The above procedure provides two values where neither white gaps nor dark lines are present. The median value of this range is entered in the MACF field in the Roll Media Manager. The given media profile (media thickness, tension, MACF, and lamp power settings) can then be saved in the Roll Media Manager, and used whenever that type of media is present.

1. Open the Roll Media Manager.
2. Enter the media value in the MACF field.
3. Click on "Create new media from current settings".

Note: *You can either save the media with the same name or create a new name for the media.*

Result

When you use the same media in the future, it will always have this media advance correction factor associated with it.

Chapter 7
How to Use the Static Suppression Upgrade Kit

Reduce Static with a Static Suppression Kit

Introduction

The Océ Static Suppression Upgrade Kit is a Commercial Product that can be ordered as part # 3010106603. If you are experiencing static-related imaging problems this optional upgrade kit contains an ionizer bar that provides a solution to reduce static. Some rigid media can have a large static surface charge. If the charge is high enough, ink can be repelled from the media. This ink mist can show up as cloudy areas in white sections of the image. Static not only causes these printing artifacts, but can also result in excessive ink accumulation on the bottom of the carriage.

Note: *You must have at least printer software revision 1.7 or greater, installed to support the static suppression ionizer bar.*

Purpose

Ionization is a solution to the problem of static. A common print industry method of controlling static electricity is the use of ionization. For the Océ anti-static bar to be effective, it must be close to the media. The bar uses AC current to create positive and negative ions, which are attracted to the unbalanced surface of the material. This neutralizes the media and ink is more readily accepted. It is important to note that static electricity cannot be entirely eliminated; only reduced. To eliminate static electricity, something physically would have to be done to the conductivity of the material.

Humidity is also important to control static. Static-related print issues can be greatly reduced by an increase in print environment humidity. While most media will print without difficulty at humidity levels between 30 and 50%, thermoplastics will print more successfully when humidity is above 40%. Some locales, such as desert areas frequently deal with very low humidity, while other regions only experience this at certain times of the year. If a printer is installed in a low-humidity area and/or a large volume of printed work is on media that is prone to static, we recommend the installation of a humidity control system.

When to do

Why Static is a Problem

Many standard print materials such as PVC and acrylic are electrical insulators, and the static charge generated and held by these materials can provide some printing challenges. Thermoplastic materials are the most common static-laden print media. Static-prone materials tend to attract dust and hair and release charges that can be felt and seen.

How to Activate the Static Suppression Ionizer Bar

1. Press the Settings tab on the printer interface screen.
2. Click on the Printer icon.
3. If the Ionizer Bar option is set to Off, set it to ON (this option is not displayed if the ionizer bar is not installed).

Note: *Once you have set it to On, it will always automatically turn on at the beginning of a flatbed job. Unless you use media that you are certain does not require static reduction, there is no need to turn if Off as the bar is only active when the printer is printing.*

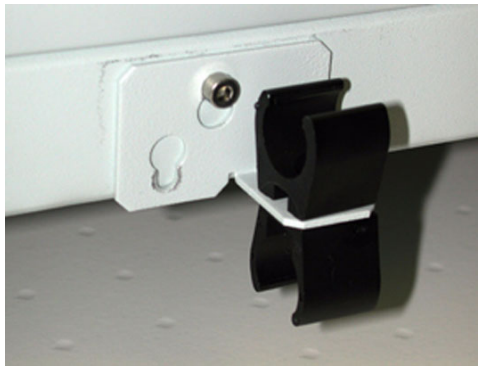
How to Change the Height of the Bar

The Ionizer bar is mounted by default to accommodate media up 13mm (0.5 inches) in height. If you need to use media that has a thickness of greater than 13mm you will have to reverse the mounting brackets. When the brackets are reversed the maximum thickness of media that can be used with the ionizer bar is 38mm (1.5 inches).

1. Turn off the printer power switch.
2. Press down on the ionizer bar first from one end and then the other to release the bar from all four brackets.

[73] Remove Static Bar

3. Loosen the bracket mount screw and then slide the bracket up in the keyed slot to remove it.



[74] Bracket Mounted Low

4. Turn the bracket 180 degrees and then fit the other keyed slot over the bracket screw.
5. Slide the bracket mount until the screw is located in the smaller end of the keyed slot.

[75] Bracket Mounted High

6. Make sure the bracket is level an then tighten the bracket mount screw.
7. Repeat Steps 2 to 5 until all four mounts are reversed.

Result

The printer can now use media with a maximum thickness of 38mm (1.5 inches).

Chapter 8
Ink System Management

Arizona 200/250 GT Ink

Introduction

The Arizona 200/250 GT uses UV-curable inks including Cyan, Magenta, Yellow, and Black. Due to the UV curing technology, the ink dries immediately, but can take up to 24 hours to cure fully. In most cases, the printed material may be handled or cut directly after printing.

These inks have very little odor, but for optimal safety some ventilation is needed. The printer should operate in an area where a good standard of general ventilation is available at 5 to 10 air changes per hour. Mechanical ventilation must be added where the air changes are under 5 per hour. The minimum space/working room volume for the printer is 69 m3 or 2430 cubic feet.

Note: *Read the section on ink safety (see 'Safety Guidelines for Ink Materials' on page 24) before you handle the ink.*

The printer is optimized for the specific UV-curable ink supplied by Océ Display Graphics Systems. The ink is supplied to the printer in 2 liter collapsible bags that are loaded into the printer by means of quick-change connectors that are bonded into the top corner. To install on the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling. This opens up the flow path for the ink. The bags contain tags that identifies them to the printer when they are loaded. This allows the printer to ensure that the correct ink is loaded.

This method of ink delivery has several benefits over bottles or cartridges:
The self-collapsing bags make it easy to see how much ink remains in each bag without having to reference the user-interface.

- Virtually all the ink is successfully extracted from the bag by the printer, reducing the otherwise costly waste of usable ink.
- Ink changes are performed without mess or spills, keeping the environment around the printer clean.
- Ink changes can be performed during printing - this prevents wasted prints and lost time.

Only qualified inks can be used. If a bag of ink with an invalid serial number, expired use-by date, incorrect color placement in the ink bay, or if an expired tag is connected to the printer, then the operator is alerted and an error message is displayed.
The ink delivery system provides the printheads with ink at the appropriate temperature and pressure. Each printhead has a corresponding ink reservoir on the carriage. Pumps supply ink to the reservoirs on demand. Float sensors in the reservoirs control the level of ink and initiate demand when required. Ink temperature control is achieved by pumping a coolant fluid through the ink reservoir

block and printheads. An internal thermostat on each printhead and one on the reservoir block provides temperature feedback.
The condition of the printheads is maintained by periodic cleaning at the maintenance station on the gantry. During this procedure the operator suctions the printhead nozzle plates, removing ink and possible contaminates in the process (details of this procedure are available in the Maintenance sectionPrinthead Maintenance).

UV Flush

UV Flush is used as a cleaning agent for the printheads or to flush the ink lines of ink for a printer relocation or long-term storage.

Attention: Do not install inks that are not certified by Océ Display Graphics Systems for use in this printer, as this may result in:
Poor quality prints, uncured ink in the finished prints (NOTE: This is a serious health and safety risk!), and permanent damage to the ink pumps, filters, ink lines or printheads.

Illustration

[76] Ink Bay With Bags

Ink Filters

The Arizona 200/250 GT ink system is protected from contaminants in the ink by means of four ink filters. These are easily accessed and can be replaced by the end-user when they become blocked with debris. The expected average lifetime for a filter is approximately 6 months or 11 bags of ink (22 liters). However, some filters can last longer and some will require more frequent replacements due to the ink color (pigment) and varying rates of use.

Note: *A loss of pigment when printing a nozzle check indicates that a filter is clogged and must be replaced.*

How to Store and Handle UV Ink

To ensure good quality images and to extend the life of printheads in the Arizona 200/250 GT printer, it is important to have good UV ink management procedures. UV inks must be properly handled and stored correctly.

- Inks must be stored within a temperature range of 15º to 40ºC (59º to104ºF). Exposure to extreme temperatures will reduce the expected life of the ink.

- Do not use ink that is past the expiry date displayed in the Ink System Status menu (click the ink icon in the Print Job Control module to view the ink menu).
- Perform Printhead Maintenance every day before printing.
- Swab the printheads with UV Flush at least once a week (and as needed) to dislodge any potential buildup of particles or ink.

Access to MSDS Ink Information

MSDS (Material Safety Data Sheets) for each color of ink and the UV Flush are available on the customer web site at: http://www.dgs.oce.com/PrinterSupport/. The information on these sheets is more detailed than the material found in the section titled "Safety Guidelines for Ink Materials" in this document. Read and periodically review this safety information to ensure optimal safe handling procedures and proper emergency responses are followed when using UV inks and flush.

How to Change Ink Bags

Introduction

The ink is supplied to the printer in 2 liter bags. The bags have a non-spill coupler bonded into the top corner. When installing onto the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling - opening up the flow path for the ink. If a bag of ink with an invalid serial number, expired use-by date, incorrect color, or expired tag is connected to the printer, then the operator is alerted.

When to do

An ink bag can be replaced at any time. Ink bags should be replaced when:

- The operator LCD panel displays an "XXX ink low" message (the ink bag does not need to be changed immediately but monitor the level of ink remaining and change the bag before the ink runs out.
- The operator sees the bag is empty.
- An ink bag is nearly empty and the operator wants to leave the printer unattended during a long print and does not want the ink to run out. The nearly empty bag can be reconnected and used up later when the operator is present.

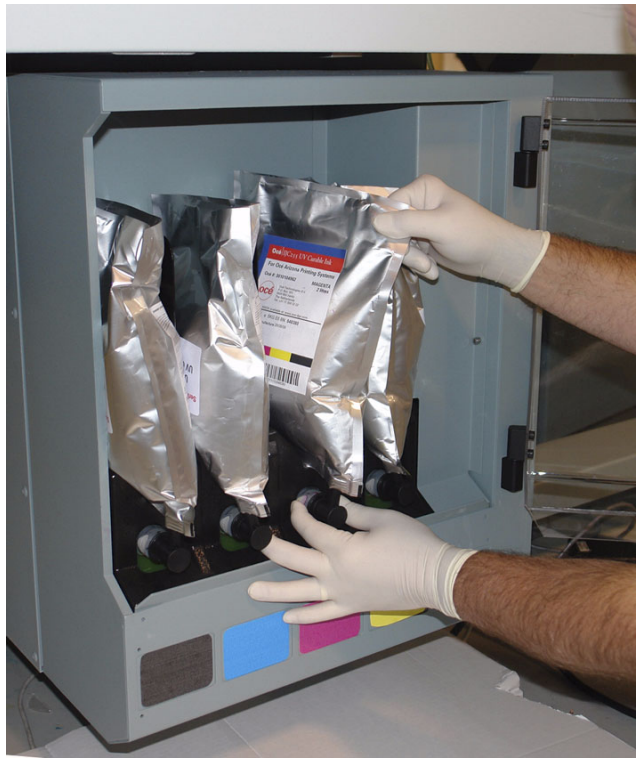
Note: *An ink bag can be changed during a print job. it is not necessary to stop the printer.*

Before you begin

Safety Information - Use appropriate safety equipment - nitrile gloves and eye protectors. Take precautions to avoid ink on your skin or in your eyes.

Caution: Be sure to read the section on Safety Guidelines for Ink Materials before handling UV inks. Also, read the MSDS sheets available from the Customer Support web site for more detailed information on ink safety and handling.

Illustration



[77] Remove the Quick-Release Coupler

How To Change an Ink Bag

Attention: For personal safety, we recommend that the operator always wear nitrile gloves, a protective apron, and safety glasses with side shields when handling inks.

1. Open the clear plastic door on the Ink Station.
2. Identify the the ink bag to be replaced.
3. Press the quick-release coupler button at the bottom corner of the ink bag.
4. Unhook the bag from the top of the ink station.
5. Replace with a new ink bag of the same color.
6. Push the quick-release coupler at the bottom corner of the new bag into place.

Note: *If you place a bag in the wrong ink station (for example, yellow ink in the black ink station) the display will show an error message and the printer will not print until the correct bag is installed.*

Chapter 9
Error Handling and Troubleshooting

Troubleshooting Overview

Introduction

This section covers general problems that may occur with the printer. Malfunctions that trigger system error messages can be caused by human error, a system malfunction, an interface cable malfunction, mechanical printer malfunction and/or printer firmware failure.

Definition

Printer Errors

Some errors are problems that interfere with the print process but do not shut down the printer completely. Typically, these errors are problems that prevent starting a printing job or that interrupt the current print. You should be able to fix these errors without a service call. Other errors stop the printer and prevent operation until the error is resolved. The printer interface informs you as to what is wrong by displaying an error message on the LCD display. If the error message has an obvious solution, apply the appropriate remedy. Otherwise note the exact error message and associated error number and what the printer was doing before the error, then place a service call.

Basic Troubleshooting

Troubleshooting helps you locate the source of errors and fix common problems that can arise during printing.

Troubleshooting Areas:

- Printer behavior
- Print quality
- Data transfer

Example 1

If There is No Power

Is the printer connected to a working power source?

The service should be a dedicated supply that is not susceptible to voltage fluctuations. This service must be provided via an independent, double pole, fused circuit breaker and a circuit ground (computer grade) located near the machine. The service should meet all local and national standards for this type of installation. The circuit breaker should be clearly labeled, indicating the On and Off positions, such as '1' for On and '0' for Off. A suitable air gap should be maintained for safe electrical isolation when in the Off position. The printer relies on this service for primary branch protection. If the printer is without power, check the local supply voltage and verify that it is set correctly.

Example 2

Drops of Ink Appear on the Media

- Check that the ink valves on top of the carriage are all open. If an ink valve is closed, there is no vacuum pressure to hold the ink and it will drip out of the printhead.
- Check that there is no hair or other debris on the underside of the carriage. Objects can accumulate ink mist and result in small drops of ink.

If Problems Persist

If problems persist, perform the following actions as appropriate for the situation:
• Check for media that is buckling or sitting too high on the table.
• If you just changed ink in the printer, review the procedures in this manual and check for successful installation.
• Try printing a test print.
• If the printer is not receiving print jobs, check the network cable connection.

Note: *If you still have problems, contact your Océ Display Graphics Systems service representative.*

Call for Service

Try to eliminate simple problems before you call your service representative. However, it is important to know when to call for service. Without training, servicing the printer yourself may cause further damage. When you have determined that a service call is required, call as soon as possible. Have the following information ready:

- Printer serial number — located near the AC power plug.
- Error message displayed on the control panel, if any.
- The exact circumstances when the error occurred, such as during printing, or maintenance.
- Note any unusual phenomena, such as peculiar printing, noises, and smells associated with the failure.

How To Improve Quality When Banding Occurs

Introduction

Banding can occur in an image for a number of reasons. Typically it occurs due to neighboring nozzles that do not fire or multiple nozzles that fire with poor directionality. This can occur if the printer sits idle for an extended period of time (e.g., overnight or longer), or if debris has been picked up from the media or table by a printhead. If this happens, perform the Printhead Maintenance procedure to clear the affected printheads Printhead Maintenance. If banding is evident, print a nozzle check to identify which nozzles of a particular print head are not firing How to Print a Nozzle Check. After you perform the printhead maintenance, print another nozzle check to confirm whether the problem has been fixed.

If a print shows banding and a nozzle check print shows more than three separate nozzles out or two or more adjacent nozzles out, the following procedures for recovering clogged nozzles is recommended to improve image quality.

Note: *Keep the table surface clean and ensure the media is clean and free of dust to help reduce banding. Use an anti-static brush, if necessary. Also use a micrometer to accurately measure the media thickness so the proper printhead gap between the printhead and the media is used. If the printhead gap is less than it should be, there is a greater probability of picking up debris on the printheads*

Recovering Clogged Nozzles

When banding appears in an image and nozzle dropouts appear in the Nozzle Check print, we recommend that printhead maintenance is performed. In some cases it may be beneficial to print an image file after maintenance, to exercise the firing of the nozzles, then run the Nozzle Check again.

If some nozzles are still out, perform a purge of only the printheads with nozzles out. To do this, close the ink valves of the colors that don't require a purge, then purge to remove excess inks.

If dropouts still persist, you can also swab the printheads Swab Printheads.

Chapter 10
Printer Maintenance

Maintenance Guidelines

Introduction

The Arizona 200/250 GT operator is responsible for the regular maintenance of the printer. This section provides detailed information about what is required for proper printer maintenance.

While Océ Display Graphics Systems furnishes guidelines for periodic maintenance, the optimum maintenance schedule evolves from careful observation of your printer over a period of use. For example, some specified maintenance may be required each time you use a particular media. The type of print job can also determine the maintenance schedule. If the printer produces a high volume of solid fill prints, it requires more tending than if it prints low-coverage images. Océ Display Graphics Systems requires that the operator follows minimum cleaning and replacement guidelines as described in this User Manual. A few minutes spent cleaning helps to ensure the highest quality prints. Each production situation is different and involves different types of print jobs, environmental conditions, duty cycles, and volume of work. While we provide guidelines for periodic maintenance, the optimum maintenance schedule depends on operator observation of the printer over a period of use.

Attention: Keeping the printer clean, especially all parts associated with the printheads, assures that your printer performs at its optimum and makes it easier to diagnose a problem, such as a leak. Daily cleaning of all mechanical parts on the printer is highly recommended.

Who Should Do Maintenance?

If your site has a technician in charge of machine maintenance, that person is the optimal candidate. While routine maintenance may be performed by any trained operator, the best maintenance results from familiarity with the printer's internal operation and history.

Operator Maintenance Schedule

The Arizona 200/250 GT printer requires regular maintenance. Periodic cleaning should be scheduled for some components during the week. A few minutes spent cleaning ensures the highest quality prints. Several areas require maintenance to ensure the highest print quality, and the printer design gives you easy access to all these areas. Diligent application of the maintenance schedule ensures optimum performance from your printer.

Note: *Do not bump the carriage or gantry as this can cause dropouts in the printhead nozzles. A hard bump can break the miniscus vaccum in the ink lines and thus allow air into the lines, which blocks the nozzle until a purge is performed. Also some procedures, such as Printhead Maintennce, require that you slide open the door to access the maintenance station. Do not bang the door hard when you close it after maintenance.*

The following table provides our recommended maintenance schedule. This is a minimum requirement and some procedures may need to be done with greater frequency. Each of the procedures is explained in detail in this section in the order of frequency required as presented in this table.

[37] Maintenance Frequency

Procedure	Frequency
Printhead Maintenance	Daily and as needed
Clean Carriage Underside	Daily and as needed
Swab Printheads	Weekly and as needed
Clean UV Lamp Filter	Weekly and as needed
Remove Ink from Table	As needed
Empty the Waste Tray	When ink is visible in maintenance station
Refill Coolant	Monthly and as needed
Clean Gantry Rails	Monthly and as needed
Change Ink Filter	After 11 bags of ink or if pigment looks weak
Change UV Lamp	When curing is insufficient
Print a Nozzle Check	When print quality is insufficient or banding occurs
Reprint the Ruler	When the rulers become unreadable
Linear Encoders	Yearly

Maintenance Procedures

Printhead Maintenance

Introduction

The Maintenance Station is located below the carriage. Printhead Maintenance takes place while the carriage is parked. The station is covered by a sliding door that has an open grid in the center that allows any waste ink to drip down through the station and into the waste tray. When you perform printhead maintenance, any excess ink and associated debris are removed from the nozzles with the result that ink drops can jet properly when the nozzles are clear.

Ink fill is disabled when the maintenance station sliding door is open. No more than 4 purges can take place (minimum of 10 seconds between purges) without closing the cover plate and allowing the reservoirs to refill. Multiple purges are not required.

Note: *The nozzle plate on the printhead has a non-wetting coating - contact with this surface may affect the performance of the printhead. Do not wipe the nozzle plate with anything other than the suction-head (or the supplied swabs when following the swab procedure) as this can damage the nozzles and impair performance.*

Purpose

To clean the nozzles of the printheads and thus ensure better image quality and avoid banding.

When to do

Maintenance occurs at the start of the day (after the printer has warmed up) or when necessary (misfiring nozzles, banding in image, etc.).

Note: *More maintenance is required in dusty environments, or when there are fibres protruding from the media, or when printing on transparent media (more reflected UV light hits the printheads).*

Before you begin

Make sure the carriage is in the parked position. The carriage and gantry automatically return to this position after an image is printed. Do not move the carriage or gantry from this position as this will disable the ink pumps and thus prevent the performance of an ink purge, which is necessary for printhead maintenance.

Note: *It is not necessary to turn off the UV lamps as they are shuttered. However, they will be hot if they are on, so avoid touching them.*

Ink must be at the operating temperature of at least 40° Centigrade (140° Fahrenheit) before you perform printhead maintenance. The Job Control module of the User Interface displays the ink temperature. If the temperature is low, activate the ink heater by clicking its icon on the UI and then monitor the temperature display.

Required tool

3010104959 Cloth-Poly Wipe 10cmX10cm

Note: *Safety glasses and nitrile gloves must be worn when performing maintenance.*

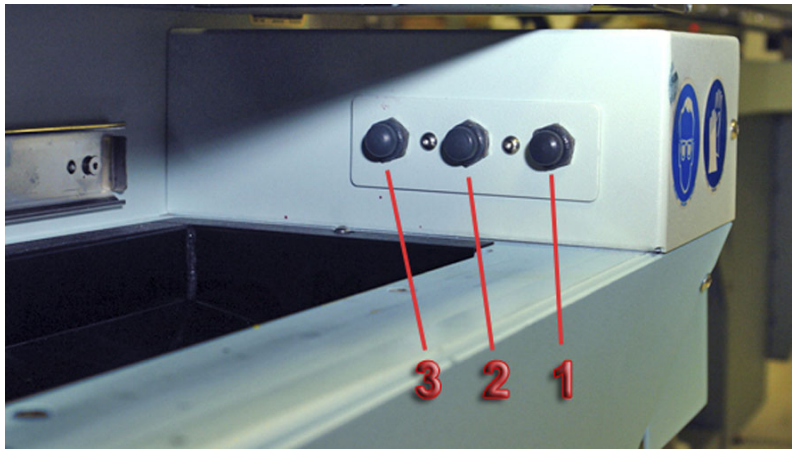
Caution: The underside of the UV lamps may be hot, avoid touching them. Also, be aware that the carriage moves up and down during printhead maintenance and there is a crushing hazard if your hand or arm are placed in the area above the three switches.

Attention: Do NOT press up too hard on the printhead while you swipe it with the suction-head as this can dislodge the printhead and require a service call to re-seat the printhead.

Note: ***Maintenance Station Switches:***
There are 3 switches inside of the maintenance station . They can be operated in any order. For example, you can press the second switch to raise the carriage to remove debris from the underside of the carriage even when a purge isn't required.

1. Switch 1 to purge ink
2. Switch 2 to raise carriage
3. Switch 3 to activate suction pump

Illustration



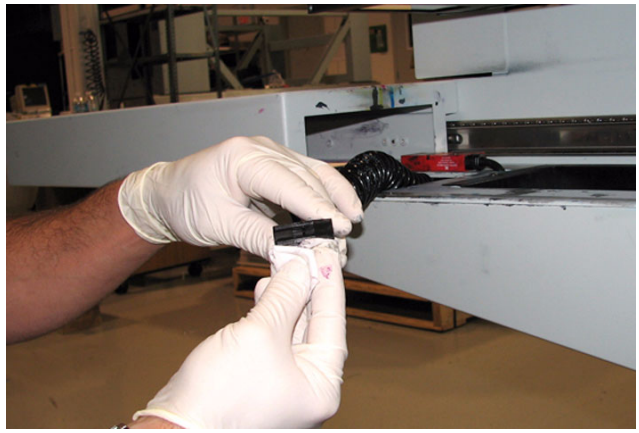
[78] Maintenance Station Switches

How To Perform Maintenance

1. Verify that the ink temperature is at least 40° Centigrade (140° Fahrenheit) before you begin printhead maintenance.
2. Slide the cover out from under the carriage to reveal the maintenance station.
3. Press and release switch 1 to initiate a purge. The carriage will lower to its purge height (4mm above the table surface). Watch the ink as it falls from the heads. After a few seconds most of the ink stops dripping and you can then raise the carriage.
4. Press switch 2 to raise the carriage to its maximum height.

Attention: Be careful not to snag the coiled suction-head hose when removing the suction-head from the holder.

5. Press switch 3 to turn on the suction pump. Pick up the suction-head from the tray at the left end of the maintenance station. Wipe the suction-head with a new, clean lint-free wipe to remove any particles that could damage the nozzles in the printheads.



[79] Clean Suction-Head

Note: *In the next step, start with the left printhead and work to the right as this limits the possibility that drops of ink will fall onto the coiled hose. Also, do not push up too hard on the printhead as you may dislodge it and this will require a service call to fix.*

6. Slide the suction-head slowly along the entire length of each printhead at a speed of approximately 8mm per second (8 seconds per printhead). The suction-head slides on stainless steel strips on the printhead. Check to see that all ink is removed – repeat if necessary.

[80] Swipe Printhead

7. Wipe the suction-head on a clean piece of new lint-free wipe before proceeding to the next printhead.

Note: *During maintenance, be careful not to touch the nozzle plates as this can damage the printhead.*

8. Slide the maintenance station cover back to its closed position. The carriage will move back to its previous print-ready height.
9. Printer is now ready to print images.

Check Print Quality

1. Print a Nozzle Check to see if any nozzles are out.
2. Print an image to make sure there is no banding or other print quality issues.

Maintenance for Persistent Nozzle Outs

1. If some nozzles are still out after the print quality check, open the maintenance station cover, raise the carriage, and then suction only the printheads that still show nozzles out.
2. Print another Nozzle Check to see if any nozzles are still out.

Note: *If problems still persist, perform the swab procedure on the affected printhead (See How to Swab a Single Printhead).*

Clean Carriage Underside

Introduction

To maintain optimal print quality, it is important to periodically clean the underside of the carriage to remove any excess ink. If the buildup of ink is excessive, it can be transferred to media and thus reduce print quality.

When to do

As part of the daily maintenance at the start of the day, or as needed, clean any ink that has accumulated on the underside of the carriage.

Note: *The accumulation of ink on the carriage underside is caused, at least in part, by static particles from the media. Dust particles and other debris from the media surface tend to attract ink mist when they have a static charge. To remove particles and to reduce the static charge buildup on the media, use a tack cloth and lightly rub the media surface before you print How to Handle Media for more information). You may also need to install a humidifier if humidity is below the required minimum defined in the Arizona 200/250 GT Site Preparation Guide (30% to 70%, Non-condensing is the suggested range for operating the printer).*

Before you begin

Make sure the carriage is in the parked position. The carriage and gantry automatically return to this position after an image is printed.

It is not necessary to turn off the UV lamps as they are shuttered. However, they will be hot if they are on, so avoid touching them.

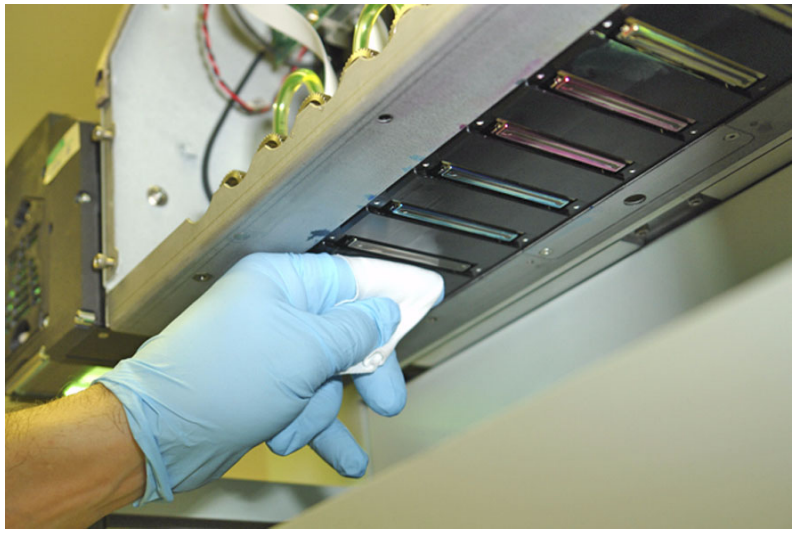
Required tool

Cloth-Poly Wipe 10cm x 10cm

Note: *Safety glasses and nitrile gloves must be worn when you handle ink.*

Caution: The underside of the UV lamps may be hot, avoid touching them.

Illustration



[81] Ink Removal Technique

How to Clean the Carriage Underside

1. Slide the maintenance station cover plate out from under the carriage to reveal the maintenance station.
2. Press switch 2 to raise the carriage to its maximum height.
3. Wrap a clean poly wipe cloth around your index finger.

Attention: In the next step, make sure that you do not touch the nozzles of the printheads. If you happen to touch one with the cloth, you must perform a printhead maintenance. Note that contact with the printhead by any object other than the suction-head used for maintenance can cause damage to the nozzles and result in poor image quality or possibly require a printhead replacement.

4. Slide the cloth along the metal plate between the first two printheads to remove any ink that has accumulated.
5. Reposition the wipe so that a clean area is wrapped around your finger.
6. Proceed to the next space between printheads and slide the clean area of cloth along the metal plate.
7. Repeat steps 3 to 6 until all ink is removed from the spaces between printheads. Use a new cloth wipe, if necessary.
8. Slide the maintenance station cover to the closed position.

Result

Printer is ready to print quality images.

Swab Printheads

Introduction

To ensure optimal print quality, it is important to periodically clean the printheads with a swab to remove any excess ink or any debris that was not removed by Printhead Maintenance.

Purpose

Important Caution: To maintain print quality it is very important to swab the printheads at least once a week, or more frequently, if required. Failure to do this may result in **permanent printhead damage**.

When to do

At the end of each week, clean the printhead nozzle plates using the swabbing procedure. This procedure may also be used when regular printhead maintenance fails to fix blocked or misfiring nozzles or to remove debris from the bottom of the printhead.

Note: *If UV ink has fully cured on a printhead it must be replaced. Contact your Océ service representative.*

Before you begin

Print a Nozzle Check to determine if any nozzles are not firing properly. This will help to determine whether some or all of the printheads must be swabbed. You can also do a visual inspection of the nozzles (use a flashlight if the ambient room light is not adequate).
A small bottle (125ml) is supplied with the printer accessory kit. Label this bottle as "Flush" and use it only to hold flush for use during the swab procedure. To prevent contamination of the flush in the bottle, never re-dip a used swab in the flush.

Required tools

Foam Tipped Swabs (3010105434 Swab Foam Flex Tip)
Flush (3010105397 Flush UV 5 Liter)
Bottle-HDPE 125ml for flush (3010105433)
Nitrile Gloves
Safety Glasses

Attention: Never "scrub" the printhead with a swab as this will drag debris into other nozzles. Always slowly move the swab across the printhead with the swab at an angle and not perpendicular to the printhead.
Never use Isopropyl alcohol to clean the printheads. Do not allow swabs to be contaminated with any dust or dirt prior to use.
Note that the swab has a seam that can damage the printhead nozzles; use only the semi-curved foam sides of the swab.

Caution: Use appropriate safety equipment — nitrile gloves and eye protectors.

How to Swab a Single Printhead

Note: *Swab one printhead at a time to reduce ink waste during the purge and also to minimize ink spill on your hand. In order to achieve the most effective swab, it is best to swab immediately after a purge while the ink is still dripping from the printheads. Close the ink valve so that the ink is under slight pressure to help clear debris from around the nozzles.*

1. Open the maintenance station cover.
2. Close the ink purge valves of the three other colors, but leave open the valve for the color you will swab.
3. Dip a swab in a small container of flush.

Note: *Use 1 swab per printhead. Do not re-dip a swab into the flush.*

4. Press and release switch 1 to initiate a purge.
5. Within 3 seconds of pressing the purge button, close the remaining purge valve. The carriage will lower to its purge height (4mm above the table surface) and the ink will continue to drip from the printheads.
6. While the ink is still dripping, position the swab at the far end of the printhead and slowly draw the swab towards you. Hold the swab at an angle to limit dragging debris from one nozzle to the next. Do not let the seam in the foam touch the nozzle plate.
7. Rotate the swab by 180 degrees and repeat the previous step.
8. Discard the swab and repeat Steps 2 to 6 for all the other printheads (if needed).
9. Perform Printhead Maintenance.
10. Run a Nozzle Check print or an image test print and verify that all nozzles are firing properly.

Note: *If the problem persists, you can swab multiple times. Use a new clean side of the swab each time (this means a maximum of two swipes per swab). It is possible that as many as ten swipes can be required.*

11. Run another nozzle check, if necessary. When the Nozzle Check print does not show any nozzles out, the printer is ready to produce quality images.

Clean UV Lamp Filters

Introduction

The top of the assemblies that house the left and right UV lamp cartidges contains a filter that can cause overheating of the lamps if it becomes clogged with dust or debris.

When to do

Check the condition of the filters weekly and clean them as needed. If dust accumulates, this can lead to overheated lamps and results in an error message. It is best to clean the filters periodically to avoid overheating, but if you do receive an error, check for dust or debris. If you get a lamp overheat error and there is no dust on the filter, call for service immediately.

Required tools

Toothbrush (or similar brush device)
Handheld Vacuum appliance

Attention: Failure to clean the filters can lead to overheating of the lamps and can result in a shorter lamp life.

Attention: Do not remove the filters and do not diassemble the lamp cartridge due the danger of high voltage power.

How to Clean the UV Lamp Filters

1. If there is any dust or debris on the surface of the filter, use vacuum cleaner to remove it.
2. Use a small brush to loosen any dust or debris that is embedded in the mesh of the filter.
3. Use the vacuum cleaner to remove any material loosened in step 2.

Remove Ink From the Table

Introduction

How often you need to perform these procedures will vary, depending on printer usage and work habits.

Remove Ink from Table

Clean ink from the table whenever necessary. Once UV ink is cured, the best method for removing it from the table is to use a scraper (it is also possible to achieve good results with a razor blade that is set into a handle/holder). Be careful not to scratch the aluminium surface of the table when scraping off the cured ink.

Unplug Vacuum Holes

The vacuum holes in the table surface may become plugged with ink and thus reduce the efficiency of the vacuum. To clear the holes, use an 1.5mm diameter rigid material (e.g., a paper clip) to ream them out, as required (this is not likely a daily task, but must be performed as needed).

Required tools

Poly-Wipe Cloth
Nitrile Gloves

Note: *When scraping ink off the table be sure to remove all of the dry ink particles. Use a portable vacuum and then a wet lint-free cloth to ensure no debris is left on the table that could be picked up by a printhead.*

How to Remove Ink

1. Scrape any cured ink from the surface of the table with a scraper (or a razor blade in a holder).
2. Use a vacuum cleaner to remove the scraped particles of ink and any other debris on the table surface.
3. Use a lint-free cloth soaked in isopropyl alcohol to ensure that the table surface is clear of any remaining particles.

How to Unplug Vacuum Holes

1. Identify any vacuum holes that are plugged with ink.
2. With an 1.5mm diameter rigid material (e.g., a paper clip), ream out any of the holes that have been plugged.
3. Clear any resulting debris with a vacuum cleaner or a wet lint-free cloth.

Empty the Ink Waste Tray

Introduction

The waste tray is located below the Maintenance Station. It accumulates ink that has dripped from the printheads or ink waste that results from a purge when performing Printhead Maintenance or Swabbing the Printheads. The ink drops onto a sloped drain plate at the base of the Maintenance Station and drains from there into the waste tray.

When to do

Check the waste tray periodically and empty, when needed. When you perform Printhead Maintnance, it is a good practice to visually examine the sloped drain plate at the bottom of the Maintanance Station. If ink starts to pool on the drain plate it is time to empty the waste tray (if you can see ink it means the the waste tray is full and is now backing up into the maintenance station). The capacity of the waste tray is approximately 1.5 liters.

Required tools

Cloth or paper towel
Empty semi-transparent plastic container
Nitrile Gloves

How to Empty the Waste Tray

1. Put a cloth or paper towel in place on the floor to catch any drips while the tray is emptied.
2. Place a suitable empty container that holds at least 1 liter under the waste tray drain.

[82] Waste Tray Valve

3. Turn the valve on the waste tray until it starts to drain the waste material.
4. Shut off the valve when ink no longer drains out (or if the container become full).

Note: *The valve closes clean (drip free) but because it has long pipe use a piece of cloth or paper to wipe it clean as some ink can remain inside and drip out later when the printer is in motion.*

5. Dispose of the waste material in a suitable, environmentally-friendly manner.

Fill the Coolant Reservoir

Introduction

The coolant is a thermal fluid used to maintain the temperature of the ink in the printheads and ink reservoirs on the carriage. Temperature control of the ink is required in order to achieve the correct ink viscosity, which affects the jetting velocity of the ink and thus the quality of printed images. The coolant is pumped past a heater that has a thermostat to maintain the coolant temperature. The coolant flows in series through each of the printheads and then returns to the coolant reservoir. Each printhead has an internal sensor that provide temperature feedback. The reservoir block also has a sensor to provide feedback. The coolant reservoir contains an optical level sensor. A sight tube on the side of the gantry, at the opposite end from the carriage, displays the level of coolant in the reservoir. The operator must maintain this level.

Purpose

If the coolant level is low, the ink and printheads cannot be maintained at the proper temperature. Periodically check the level of coolant and add more coolant if it is below the center of the sight tube.

When to do

Check the coolant level sight-tube, located at the side of the gantry, to verify that the level is low. When filled to the proper level, the fluid will be at the center of the sight-tube. If the level of coolant is lower than the center, it is time to fill it. Keep the coolant at the correct level to maintain the proper ink temperature as the coolant is important to that process.

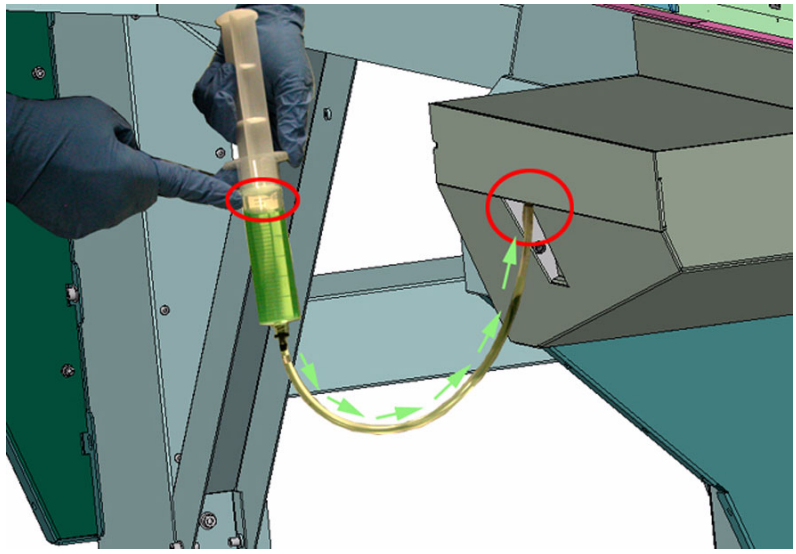
Before you begin

Verify that the coolant level is below the center of the sight-tube. If it is at the center or higher, it is not necessary to add coolant. The sight-tube is located on the side at the right end of the gantry Operator Interface Hardware .

Required tools

Syringe (supplied with Starter kit)
Wear gloves (coolant will not harm the skin, but gloves are recommended).
Coolant

Illustration



[83] Fill Coolant Reservoir

Fill the Coolant Reservoir

1. Open the container of coolant fluid.
2. Insert the syringe into the fluid and draw back the plunger until the syringe is almost full (leave a small amount of air so that you can expel it at the end to avoid fluid dripping from the fill nozzle.
3. Wipe any excess fluid from the hose attached to the syringe (if the hose is wet it is difficult to perform the next step).
4. Insert the hose into the fill nozzle above the coolant level tube.
5. Press on the syringe plunger to inject the fluid. Inject the entire contents of the syringe. Repeat, if necessary, until the coolant level is above the halfway point on the sight tube.

Note: *Do not overfill the coolant as this can cause temperature variations. If the coolant does not flow into the fill nozzle the printer may have a defective nozzle and this will require a service call.*

6. Remove the hose and store the syringe and the coolant fluid container until it is needed again.

Clean Gantry Rails

Introduction

Dust and debris can accumulate on the gantry rails, which run along the length of the table. The bearings that run on the rails are equipped with shields that are designed to keep debris from entering the bearing housing. After a period of time and use, debris can accumulate on the outside of the bearing shields as the gantry travels along the table.

When to do

If you notice any dirt or ink on the gantry rails, or an accumulation of debris on the rails bearings, clean them immediately.

Required tool

Poly-Wipe lint-free Cloth

Attention: In the event of an ink spill on the rail, it should be cleaned immediately, before the bearings have a chance to run over the spill. After the area has been cleaned, wipe the spill area again thoroughly with a water-moistened lint-free cloth to remove any chemical residue before running the gantry over the area again. Slight ink stains that remain on the rail after cleaning are not a major problem.

How to Clean the Rails

1. Power OFF the printer at the AC power On/Off switch located at the side of the electronics enclosure.
2. Turn the switch to the horizontal Lockout position and apply a lock.
3. Use a dry lint-free cloth to remove all visible debris that has accumulated next to the bearing shields. It is only necessary to clean the outside bearing shields. When removing debris always wipe away from the shields.
4. Remove the lock from the Lockout switch.
5. Power ON the printer.

How to Change Ink Filters

Introduction

Each ink color has a filter that removes any particulate matter from the ink as it is pumped from the ink bag toward the printheads. The ink filters are located at the electronics end of the printer around the corner from the ink bags.

When to do

The ink filter for each color of ink must be replaced after 11 bags (22 liters) of that ink have been consumed. If an ink filter becomes clogged, it will trap color pigment and affect the color balance of printed images so it is important to change a filter before this occurs.
If the Nozzle Check image prints one color weaker than normal, this is an indication that the ink filter for the affected color is clogged and the filter must be replaced.

Note: *Air can accumulate in the ink filter when an ink bag that contains a small amount of air is drained. Also new filters will contain air that must be released. You can prevent an overflow of ink into the 0.2 micron filters associated with the purge valves in the top of the carriage by bleeding any trapped air out of the ink filters.*

Before you begin

IMPORTANT! Open the sliding maintenance station door to disable the ink pumps.

Close all four of the purge valves on the top of the carriage.

Required tools

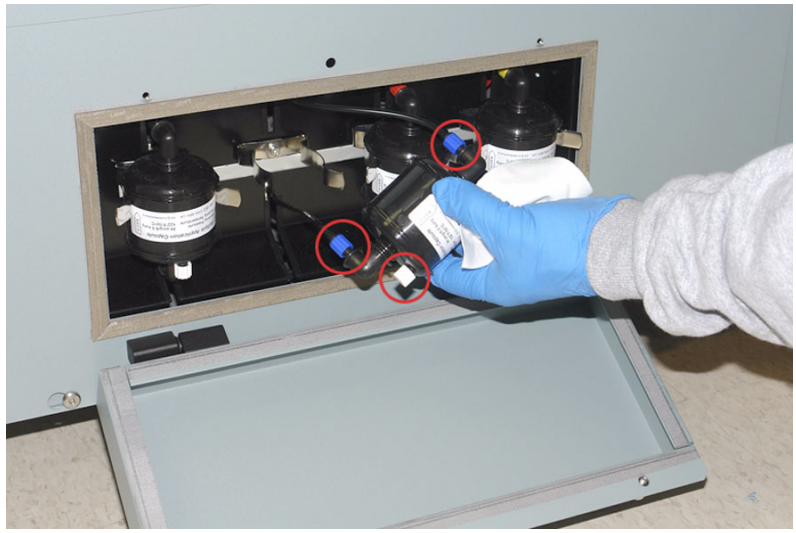
Philips screwdriver (only if enclosure thumb-screws are too tight)
Lint-free cloth

Illustration

[84] Remove Ink Filter Enclosure Cover

How to Change an Ink Filter

1. Open the sliding maintenance station door to disable ink pumps.
2. Disengage the ink bag for the color of filter you will replace from its coupler.
3. Remove the two screws that hold the ink filter enclosure cover in place (thumbscrews can be loosened by hand or use a Philips screwdriver if they are too tight).
4. Use a lint-free cloth to catch ink, and place it under the filter. Then turn the bleed cap (white cap in the red circle in the photo below) counter-clockwise to release pressure, then close it again.



[85] Invert the Ink Filter

5. Remove the ink filter from the metal retainer clips.
6. Unscrew the cap on top of the new filter but keep it for use in the next step.
7. Unscrew the cap at the top connection to the old filter (the blue cap in the circle shown in the photo above) and screw it into the top connection of the new filter, being sure to install the filter in the proper direction. Place the cap that came with the new filter on the old filter to prevent ink from leaking out of the old filter.
8. Repeat the previous step for the bottom connection. Wipe off any spilled ink.
9. Open the purge valve on the carriage for the ink color of the filter you are replacing.
10. Perform two ink purges.

Note: *It may help to have an assistant for the next three steps as they require you to move to different parts of the printer. If this is not possible you will need to place the filter on something so that it does not strain the ink line connections.*

11. Close the sliding maintenance station door to enable the ink pumps.
12. Unscrew the white bleed cap at the top connection to the new filter.
13. Reach around the corner of the printer with your right hand to insert the ink bag into the coupler (this will re-initiate ink fill).
14. Watch the open bleed cap and replace the cap as soon as you see ink appear in the opening (this may take a few minutes, depending on the amount of air in the filter since the ink pump is only active for a brief period every 10 seconds).
15. Insert the new ink filter in the metal retainer clips in the upright position (this means that the white bleed cap is at the bottom). Be careful not to pinch the ink lines.

Final Steps

1. Check the new filter to make sure there are no ink leaks.
2. Open any purge valves on the carriage that are still closed.
3. Replace the ink filter enclosure cover.
4. Perform routine printhead maintenance before printing.
5. Use a felt pen or create a sticky label to record the install date and liters consumed (refer to the Counters module for a liter count)
6. Replace the filter every 10 months or after consumption of 22 litres of ink.

How to Change Ink Bags

Introduction

The ink is supplied to the printer in 2 liter bags. The bags have a non-spill coupler bonded into the top corner. When installing onto the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling - opening up the flow path for the ink. If a bag of ink with an invalid serial number, expired use-by date, incorrect color, or expired tag is connected to the printer, then the operator is alerted.

When to do

An ink bag can be replaced at any time. Ink bags should be replaced when:

- The operator LCD panel displays an "XXX ink low" message (the ink bag does not need to be changed immediately but monitor the level of ink remaining and change the bag before the ink runs out.
- The operator sees the bag is empty.
- An ink bag is nearly empty and the operator wants to leave the printer unattended during a long print and does not want the ink to run out. The nearly empty bag can be reconnected and used up later when the operator is present.

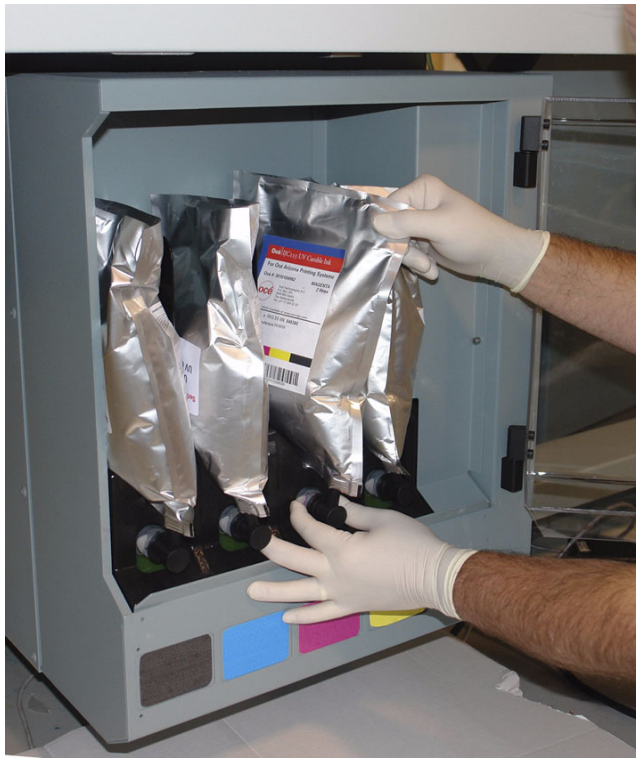
Note: *An ink bag can be changed during a print job. it is not necessary to stop the printer.*

Before you begin

Safety Information - Use appropriate safety equipment - nitrile gloves and eye protectors. Take precautions to avoid ink on your skin or in your eyes.

Caution: Be sure to read the section on Safety Guidelines for Ink Materials before handling UV inks. Also, read the MSDS sheets available from the Customer Support web site for more detailed information on ink safety and handling.

Illustration



[86] Remove the Quick-Release Coupler

How To Change an Ink Bag

Attention: For personal safety, we recommend that the operator always wear nitrile gloves, a protective apron, and safety glasses with side shields when handling inks.

1. Open the clear plastic door on the Ink Station.
2. Identify the the ink bag to be replaced.
3. Press the quick-release coupler button at the bottom corner of the ink bag.
4. Unhook the bag from the top of the ink station.
5. Replace with a new ink bag of the same color.
6. Push the quick-release coupler at the bottom corner of the new bag into place.

Note: *If you place a bag in the wrong ink station (for example, yellow ink in the black ink station) the display will show an error message and the printer will not print until the correct bag is installed.*

How to Change a UV Lamp

Introduction

The Arizona 200/250 GT uses two UV lamps, one on each side of the carriage, to instantly cure the ink during printing. These UV lamps have an expected life of 500 hours and must be replaced by the user when they fail or can no longer cure the ink at maximum available power. It is recommended that these lamps be replaced in pairs to ensure even curing in both directions. Each lamp is supplied in a cartridge that is easy to replace.

When to do

The life expectancy of the UV lamp is 500 hours. Océ recommends that both UV Lamp Cartridges be replaced simultaneously to ensure that the curing effect is balanced when printing in opposite directions. In the case of a premature failure or accidental breakage of one lamp, the operator can decide to replace only one lamp but should confirm image consistency after the replacement.

Before you begin

Ensure that the printer AC power is turned off and the lockout device is in place How to Switch the Printer On and Off.

Required tools

3mm allan key
Lockout device
UV Lamp Cartridge

Caution: The UV lamps and the carriage guard may be hot if the printer has been active. Avoid touching the guard and the lamp assembly until it is cool.

Illustration

[87] Remove UV Lamp Cartridge

How to Replace a UV Lamp Cartridge

1. Turn off the AC power and lockout the printer.
2. Remove the carriage guard by lifting it straight up and then away from the carriage.
3. Use a 3mm allan key to loosen the screw at the top of the cartridge with the lamp that needs to be replaced.
4. Slide the cartridge out of the lamp assembly and replace with a new cartridge.
5. Replace the carriage guard and make sure it is level.
6. Unlock the AC power switch and power on the printer.

Print a Nozzle Check

Introduction

The Nozzle Check print fires each nozzle individually in a manner that allows clogged nozzles to be easily identified by a visual inspection of this special print. The Nozzle Check print consists of the following elements:

- **Print Identification** - Océ Arizona 250GT Nozzle Check Version and Océ Logo
- **Solid Rectangle** - All nozzles are fired simultaneously to exercise them and this results in a solid rectangle 2.125"x 6.75" (5.4cmx17cm)
- **Print Head Identification** - Each printhead is printed in the same order as its position in the carriage. They are numbered from 1 to 8.
- **Even or Odd Row Identification** - Each color has two printheads. One printhead of a color prints the odd rows and the other prints the even rows.
- **Different Drop Sizes** - Each nozzle is fired at five different drop sizes, resulting in 5 columns of data. Small tick marks are added to the four corners of the 5-column block of data.
- **Individual Nozzles Fired** - Each nozzle is fired multiple times. Clogged nozzles can be easily identified because the 5 mm (7/32") line associated with the clogged nozzle will be missing from the image. This is often referred to as "nozzle dropout".

Purpose

The Nozzle Check is used to verify the condition of the nozzles. Clogged nozzles (nozzle dropouts) can cause banding. Perform printhead maintenance or swab a printhead to unplug clogged nozzles.

When to do

Print a Nozzle Check after performing printhead maintenance or when troubleshooting banding problems caused by nozzle dropouts.

Before you begin

The Nozzle Check has been designed to fit on a piece of media that is 36" (91.5 cm) and is 2.125" (5.4 cm) wide. Since you are likely to print more than one when you diagnose nozzle problems, make sure your media is wide enough.

Ink must be at the operating temperature of at least 40 degrees Centigrade (140 degrees Fahrenheit) before you print a nozzle check. The Job Control module of the User Interface displays the ink temperature. If the temperature is low, activate the ink heater by clicking its control button and then monitor the temperature display.

Required tools

Blue LED view light (sometimes needed to enhance contrast in the Yellow area).
Océ I/O paper

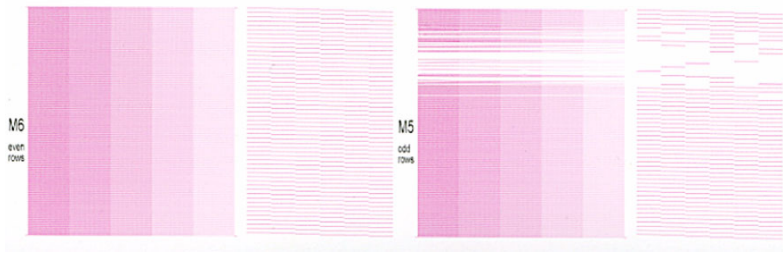
Note: *Usually, two or more Nozzle Checks will be printed to verify that nozzle issues are resolved. To calculate the required offset when you print multiple consecutive nozzle checks, add a horizontal offset of 2.5" or 60 mm to each consecutive print.*

How to Print the Nozzle Check

1. Place a piece of Océ I/O paper on the printer table.
2. Select the Nozzle Check icon at the right end of the Command Toolbar to place the nozzle check into the Active Print Job list (you can also add a Nozzle Check to the active print list when you select it from the Special Prints module).
3. Modify the horizontal offset (only if a previous nozzle check was printed on the same piece of media).
4. Confirm media thickness.
5. Activate the table vacuum.
6. Push the printer Start button to begin the print.

Check

The Magenta section of the Nozzle Check print shown in the figure below indicates that multiple nozzles are out.



[88] Nozzle Check Print Magenta Section

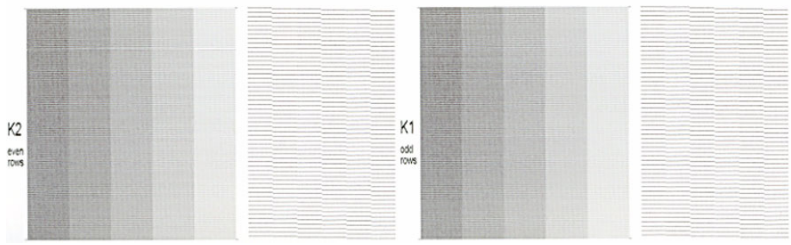
Correction

1. To correct the nozzle dropout problem illustrated above, perform Printhead Maintenance Printhead Maintenance on the colors that show dropouts, and then print the Nozzle Check again.
2. If the second Nozzle Check still shows nozzle dropouts, suction the printhead that still show nozzles out again.
3. If nozzle outs still remain, swab that printhead (see '*Swab Printheads*' on page *155*).

Result

When a printhead does not have any dropouts, it will look like the Nozzle Check print of the black (K) section illustrated below.

Note: *There is an indication of some poor directionality in one of the nozzles illustrated in the top left section of the sample below, but it will not affect image quality (although it could, if multiple adjacent nozzles show this problem).*



[89] Nozzle Check Print Black Section

Roll Media Option Maintenance

RMO Maintenance Guidelines

Introduction

The Arizona 200/250 GT operator is responsible for the regular maintenance of the printer and, if it is installed, the roll media option. When the RMO unit is kept clean and free of blemishes and defects, you will be ensured of accurate media transport and optimal print quality. This section provides information about what is required for proper RMO maintenance and cleaning.

Note: *Any time there is any foreign matter or debris on the platen or the capstan it must be removed immediately. Any spilled UV ink must be removed immediately, before it can cure from exposure to light.*

RMO Maintenance

The following table provides our recommended maintenance activities. This is a minimum requirement and frequency will depend on environmental conditions and operator work habits. How to clean the capstan is explained in detail in the next section.

Maintenance Action	Contaminant
Clean the platen	Ink
	Glue (release liner)
	Silicon (release liner)
Clean the capstan	Paper dust
	Coffee, tea, lemonade, milk, etc.
	Ink (cured, uncured)
	Glue (release liner)
	Silicon (release liner - e.g. Avery control tag 180)
Clean the media loading bay	Dust
	Ink

How to Clean the Rubber Capstan

Introduction

The capstan is a rubber-coated roller that helps to track and guide the media position. It has an encoder at one end and a brake at the other. The capstan must be kept clean and its rubber surface free of blemishes or defects to ensure accurate media transport and optimal print quality.

When to do

Any time there is any foreign matter or debris on the capstan it must be removed immediately.

Required tools

Swiffer Brush (or equivalent dust remover)
Lint-free absorbent clothes
Rubber gloves
Mild detergent
Lint-free cloth
Isopropyl alcohol (95% pure)

Note: *Always wear wrap-around safety glasses and latex gloves when working with ink or liquid solvents. If significant amounts of ink have spilled, consider donning an apron or smock.*

Attention: There is no way to remove cured or partially cured ink. Make sure that any spilled ink is removed immediately before it has a chance to cure due to exposure to light. The longer it is left exposed, the more difficult (or impossible) it will be to remove the ink.

Removing Solid Debris

Dust the surface of the capstan using a Swiffer or other lint-free brush or cloth. Surface may be brushed in any direction.

[90] Remove lint, dust, paper particles and debris

Removing Stains (coffee, tea, soda pop, etc.)

Supplies Needed: Rubber gloves, soap, hot water, and lint-free cloth.

1. Put on nitrile gloves
2. Mix a cleaning solution that is 50:1 hot water to soap.

Note: *Use a mild detergent such as Ivory - avoid soaps that have dies, moisturizing oils, or perfumes as they may damage the capstan. Read the label! Our R&D Lab has tested only Ivory Detergent. If you are uncertain about a detergent try it out in a 50:1 solution on a small area at the end of the capstan.*

3. Wet the cloth in the cleaning solution and wring out excess liquid. Scrub the surface of the capstan using the cleaning cloth.
4. Allow adequate time for the capstan to dry.

Note: *If scrubbing action leaves debris on the surface, wait for the surface to dry completely, then follow the procedure listed above for "Removing Solid Debris".*

Removing Uncured Ink

Supplies needed: Rubber Gloves, Wrap-around safety goggles, Several absorbent clothes, and Isopropyl Alcohol (95% pure).

1. Put on gloves and goggles.

[91] Ink Spill on Capstan

2. Wipe up the majority of the ink by blotting with the absorbent cloth.

[92] Wipe up ink with cloth

3. Wet a new absorbent cloth with alcohol and wipe up the remaining ink.

[93] Wet fresh cloth with alcohol

Note: *Note: It may be difficult to tell whether or not all the ink has left the surface. Continue to wet and wipe the capstan surface until the cloth does not show any sign of ink color.*

[94] Wipe up remainder of ink

4. Allow adequate time for capstan to dry.

Note: *If the scrubbing action leaves fibers from the cloth on the surface, wait for the surface to dry completely, then follow the procedure listed above for Removing Solid Debris.*

Result

When the capstan is kept clean and its rubber surface free of blemishes or defects you will be ensured of accurate media transport and optimal print quality. If its surface is badly damaged the capstan will need to be replaced.

Appendix A
Application Information

Application Resources on the Web Site

Introduction

Application Hints and Tips and Application Bulletins are located on the customer support web page. To access this page, navigate to http://www.dgs.oce.com/PrinterSupport/, then select from the Customer Accessible Pages menu. Note that there are other resources available, including Onyx software bulletins, Benchmark requests, MSDS information, and a Consumables web link. The Application Hints and Tips document found on the customer support page are based on our experience with the Arizona 200/250 GT printer. They are offered as starting points or suggestions for dealing with various situations. Since this information is subject to change, please check the web site occasionally for the most current list of Hints and Tips. You will find that they are grouped into three categories: Maintenance, Printing, and Color and Profiling.

The Application Bulletins posted on the web site deal with many aspects of handling and managing media. At the time of this publication, the following bulletins are available to view or download:

Application Bulletin 1 - New Media Profiles Available
Application Bulletin 2 - How to Select A Media Model and ICC Profile
Application Bulletin 3 - How to Achieve Optimal UV Lamp Power
Application Bulletin 4 - ONYX ProductionHouse Anti-Virus Software Issues
Application Bulletin 5 - How to Handle and Prepare Media for Printing
Application Bulletin 6 - How to Improve UV Ink Adhesion
Application Bulletin 7 - About Media Models and Application Notes
Application Bulletin 8 - How to Hold Media Flat on the Printer Table
Application Bulletin 9 - How to Handle Media after Printing
Application Bulletin 10 - How to Deal with Static
Application Bulletin 11 - Printing Backlit Materials
Application Bulletin 12 - Printing Multiple Pieces of Media Simultaneously
Application Bulletin 13 - Printhead Maintenance - Revised Version
Application Bulletin 14 - New Ruler Guides Available in Special Prints
Application Bulletin 15 - How to Print Lenticular Images
Application Bulletin 16 - Media Model and ICC Profile Creation Guidelines
Application Bulletin 17 - Managing Arizona 250GT Ink Inventory
Application Bulletin 18 - How to Bleed Trapped Air from an Ink Filter
Application Bulletin 19 - Reduce Static with an Océ Static Suppression Kit

Media Notes

The Media Notes document contains useful information about printing on the following media:

- Card Stock
- Clear Acrylic or Polycarbonate
- Plastic Coated Aluminum Sheet such as DiBond®
- Fluted Polypropylene
- Foam Cored Clay Coated Paper Capped Board
- Foamed PVC such as Forex® or Sintra®
- Glass
- Heavyweight Outdoor Poster Paper such as IJM 601 or HPSTERSOL
- Irregularly Shaped Materials
- Opal/White Acrylic or Polycarbonate such as Lexan®
- Polystyrene
- Pre-Stretched Canvas
- Textiles
- Un-Documented Materials
- Variable Height Materials

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